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ABSTRACT

Intended for teachers of secondary and college level students, this instructor's guide presents an overview of materials covered in the student text, followed by four categories of examination questions and teaching aids. The guide reflects the format of the student text and is divided into four sections. A brief description is provided of each section of the student text: Section I gives the reader factual background on the beginning of the atomic age during the Truman years through the Reagan administration; section II defines the various types of nuclear weapons; section III discusses the negotiating process, SALT talks, verification, existing treaties and agreements, ongoing arms control negotiations, and violation concerns; and section IV describes the effects of nuclear war and civil defense. For each section this guide presents four categories of examination questions: essay questions, true or false statements, multiple choice questions, and completion and fill-in questions. Test answers follow each category. A list of teaching aids intended to provide educators with a choice of projects, topics for debate and written reports, and library assignments is included for each section. (LH)

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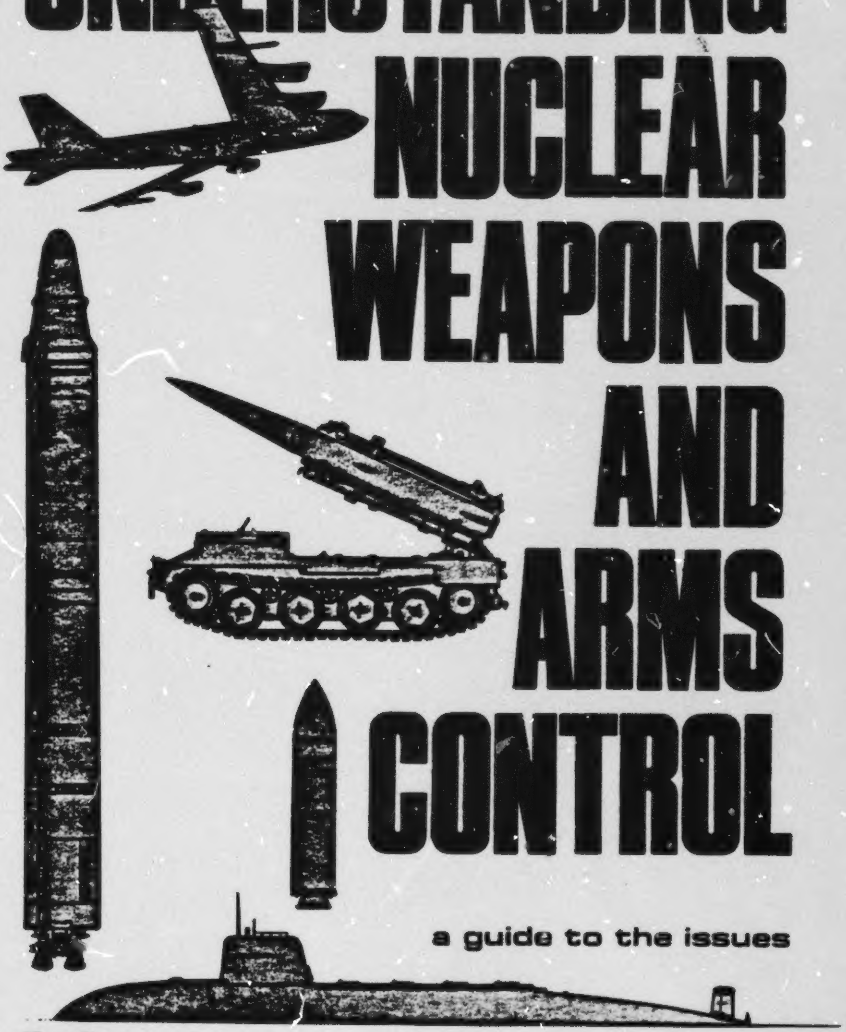
UNDERSTANDING NUCLEAR WEAPONS AND ARMS CONTROL

a guide to the issues



INSTRUCTORS' MANUAL

SO 016 130

Prepared by:

Professor William J. Zahka
Widener University
and
Teena Karsa Mayers

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To the Instructor:

There are countless opinions on how to teach a course, and the preferences of the educators are just as diverse. It is not possible to satisfy each need; therefore, this manual includes a variety of tests and procedures, each designed for a specific purpose.

The subject matter is complicated and until a few years ago was debated only by a handful of experts. Measures have been taken to simplify the text so that it is easily understood and interesting. Because of the complexity of the issue, there is no room for "trick questions."

To provide adequate instructional assistance, this instructor's manual offers an overview for each section and prepares examination tests in the following categories:

Category A - Essay Questions which ask the student to think through and restate the information in his or her own words.

Category B - True or False Statements of factual data that should have been gained by the reader.

Category C - Multiple Choice Questions which are designed to stimulate the thinking process.

Category D - Completion and Fill-In Questions that test knowledge of the factual historical data.

The final category called "Teaching Aids" gives you, the educator, the opportunity to develop your own methods of teaching in recognition of the particular level of your students. There are several methods to choose from such as requiring written reports, library research assignments, book reviews, media reports, games and biographical sketches.

In sum, this manual has been devised to involve students in the political process, to provide knowledge about a global issue vital to the survival of mankind. It is purposefully presented in a simple format that is not intimidating and that contains the factual information needed to arrive at an informed personal judgment. It does not endorse any course of action.

In my opinion, memorization is necessary for much of this subject matter as well as a constant review of many aspects of the issue. Adequate assignments in the two categories, Essay and Teaching Aids, give sufficient exercise for free expression. The teaching methods in this manual are the same methods I used to learn this subject myself - well enough to do this book. So can you!

Teena Karsa Mayers
Teena Karsa Mayers

PREFACE

The issues of nuclear weapons and nuclear war are too awesome to permit hyperbole. Radiation and other previously known effects of nuclear war were already horrifying enough before the release of the more recent data about "nuclear winter" caused by clouds of debris released into the upper atmosphere.

For this reason, Understanding Nuclear Weapons and Arms Control is intended to present objectively the known facts of the nuclear age as they have occurred and are occurring. The information therein has been assembled from U.S. Government documents. The bi-partisan endorsements attest to its accuracy. This book does not endorse any specific course of action nor does it advocate any particular point of view.

The purpose of this manual is to assist you in the teaching of a complex yet compelling and essential area of study. It is a lively topic of discussion in the media and Congress. The subject of nuclear weapons and arms control embraces a wide spectrum of disciplines: political science, economics, foreign policy, physics, engineering, psychology, geography, sociology, religion and history.

This Instructor's Manual enables you to teach students this issue by furnishing its historical background, by providing information about the technology of the weapons, by reporting alternative systems of response to the nuclear threat, and by indicating the problems of verification and possible violations of treaties and agreements. Not least important, the course gives a concise report on the "Authority to Release Nuclear Weapons" step by step. It concludes with the essential facts on the Effects of Nuclear War and the limits of Civil Defense.

For easy access, the book is divided into four sections. Each section is written to aid the educator by furnishing concise, factual, and objective information.

Section I gives the reader factual background on the beginning of the atomic age during the Truman years through the present Administration. Highlights of each paragraph are indicated in red in the margin. Graphs and charts cover the various strategies adopted by each administration. In addition, Section I describes the concerns of the rest of the world regarding the arms race between the two superpowers.

Section II defines the various types of nuclear weapons and their destructive power in brief, concise terms without scientific jargon. The technology, therefore, can be understood in a fashion that will enable the teacher to comprehend the awesome issues. Diagrams and photographs provide visual aids.

Section III discusses briefly the negotiating process and the initiation of the SALT Talks leading to the SALT I and SALT II Treaties. Other treaties and agreements are explained as well as on-going arms control negotations. The complexity of verification and the concerns about violation on the part of the U.S. and U.S.S.R. are also covered.

Section IV describes plainly and simply the scientific effects of nuclear war ending with the recent Nuclear Winter Report. The status of civil defense efforts by the Federal Emergency Management Agency concludes this section.

The book closes with definitions of Arms Control Terms and Acronyms.

For each of the above sections, examination questions consist of four categories of tests, some simple and some complicated. They include:

Category A - Essay Questions involve additional research and require the student to give explications in a creative fashion. This will enable the instructor to determine if the subject matter has been understood well enough by the student.

Category B - True or False Statements consist of factual data that should have been retained by the reader. In order to minimize the "guessing process," if a student determines the statement to be False, the student is then required to give the True statement.

Category C - Multiple Choice Questions are designed to stimulate the thinking process. There are no "trick answers" to confuse the student by making half of the statement correct and half incorrect.

Category D - Completion and Fill-In Questions demonstrate whether the student has absorbed the factual historical data discussed in each section.

At the end of each category of Examination Questions are the correct answers to the test.

Finally, a list of Teaching Aids provides the educator with a choice of various interesting projects incorporating topics for debate, written reports, and library assignments.

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Section I

OVERVIEW

Section I of this book consists of thirty pages and provides the framework for the remaining three sections of the text.

This section gives the reader the essential factual background on nuclear weapons and strategic policy beginning with the atomic age under President Truman, through the following administrations, and concludes with the present Reagan Administration. Summarized are each President's arms control policies and strategies and their political implications.

The Truman Years from 1945-1952 recounts the development and use of the first atomic bombs and the consequences for foreign and defense policy through the development of the hydrogen or thermonuclear bomb. During this period, efforts were made to control nuclear weapons as proposed by the Baruch Plan which is briefly discussed. (pp.3-4)

The Eisenhower Years from 1953-1960 explains the Cold War period and the Eisenhower/Dulles policy of "massive retaliation" based on nuclear superiority. Deployment of tactical nuclear weapons in Europe, the launching of Sputnik, the first Soviet satellite to orbit the globe, the purported Missile Gap and the development of the ICBM are succinctly reported. (pp. 5-7)

The Kennedy-Johnson Years from 1961-1968 covers the new strategy of "flexible response," the formation of our present "triad," the Cuban Missile Crisis, and Secretary of Defense McNamara's strategy of deterrence based on the certainty of "mutual assured destruction." Also set forth are the first major successes in arms control through the accomplishment of three treaties as well as the installation of the well-known "hotline." The incorporation in missilry of the new technology of MIRVs is explained. (pp.9-12)

The Nixon-Ford Years from 1969-1976 recounts the theory of "detente" and the two-part SALT I Agreements. The emergence of a new "war-fighting strategy" is discussed as is the development of the MX missile. The key meeting at Vladivostok is briefly outlined. (pp.13-17)

The Carter Years from 1977-1980 reports on the negotiations with the Soviets for a Comprehensive Test Ban, the final negotiation and signing of the SALT II Treaty, and the problems involved in its ratification. Also covered are the strategy of "mutual assured destruction plus counterforce," the motivations underlying Presidential Directive 59, and the NATO decision on the placement of Euromissiles in Europe. (pp.19-22)

The Reagan Years from 1981-present time discusses the new emphasis on a "margin of safety," the INF Talks on intermediate-range missiles, and the President's offer of a "zero-option" to deal with such weapons systems. The START Talks, "build-down" and other proposals are also covered. (pp.23-26)

Section I also offers two visual aids:

1. Graph indicating the strategies of each administration, the defense budget at the beginning and end of each presidential term, and the number of nuclear weapons in the U.S. arsenal during that particular period. (p. 27)
2. Chart listing the members of each U.S. administration who were and are presently concerned with nuclear weapons and arms control along with their Soviet counterparts covering the period of 1945 to present day. (p. 28)

In conclusion, Section I describes the International Concerns of the rest of the world regarding the arms race between the two superpowers and the alternative proposals offered, as well as the origin and impact of the Freeze movement. (pp.29-30)

ESSAY

The Truman Years: 1945 - 1952 (pages 3-4)

1. Why did President Truman authorize the dropping of atomic bombs on Hiroshima and Nagasaki, Japan in 1945?

2. Locate on a map the cities of Hiroshima and Nagasaki. Why were these two cities chosen for bombing? Why not Tokyo, the capital of Japan?

3. How does the atomic bomb differ in structure from a hydrogen bomb? Which is the more powerful? Why?

4. What is the Baruch Plan? Who was Bernard Baruch?

5. What is the purpose and role of the United Nations? How many nations belong to this organization? In what city is it located and why?

6. Did President Truman favor nuclear disarmament or a nuclear build-up?

The Eisenhower Years: 1953 - 1960 (pages 5-7)

1. Define the following terms:

   a) Cold War
   b) massive retaliation
   c) nuclear superiority
   d) tactical nuclear weapons
   e) intercontinental ballistic missile
   f) missile gap

2. Why did the Russians launch the Sputnik missile? What was its impact on U.S. foreign policy toward the Soviet government? On the educational curriculum of the United States?

3. Identify the following:

   a) John Foster Dulles
   b) Charles Wilson
   c) Gaither Report
   d) Hungarian Freedom Fighters

4. How many nations belong to the North Atlantic Treaty Organization (NATO)? In what year was it formed? Where is it located? Who is presently the Supreme Military Commander of NATO?

5. Comment on whether the implied U.S. threat to use nuclear weapons or the death of Josef Stalin was the principal factor in the termination of the Korean War.

The Kennedy/Johnson Years: 1961 - 1968 (pages 9 - 12)

1. Soviet Premier Nikita Khrushchev is quoted (page 8): "The survivors would envy the dead." Explain what is meant by this statement.

2. Define the following:

    a) flexible response
    b) controlled response
    c) counterforce
    d) mutual assured destruction (MAD)

3. Explain in detail what the term "triad" in nuclear weapons and arms control terminology signifies.

4. Give an account of the Cuban Missile Crisis and how it was resolved.

5. What is the purpose of the "hotline" teletype between the United States and the Soviet Union?

6. What is meant by "Strategic Arms Limitation Talks?" In what year did the first meetings begin? Who attended these talks?

7. What development accelerated the nuclear race toward the end of Lyndon B. Johnson's term as President of the United States?

The Nixon/Ford Years: 1969 - 1976 (pages 13-17)

1. The Soviets increased the number of ICBMs from 20 when President Kennedy took office in 1961 to 200 when President Johnson was elected and to 800 by 1969. How were the Russians able to increase the number of ICBMs? Do you believe it had an impact on the Soviet economy? Did a reduction take place in the amount of consumer goods being produced or imported because of the very large increase in the military build-up?

2. Compare and contrast the difference between the goals of "superiority" and "parity." Which do you prefer in negotiations?

3. What is the significance of the 1972 Anti-Ballistic Missile Treaty? How does it differ from the Interim Agreement on Offensive Weapons?

4. What is meant by "counterforce capability?" By "war-fighting strategy?" Is there a similarity? If so, explain.

5. Discuss the significance of the meeting between President Gerald Ford and General Secretary Leonid Brezhnev at the Soviet port of Vladivostok in November of 1974.

6. Why was President Ford less attentive to the issue of nuclear weapons and arms control in 1975 and 1976?

The Carter Years: 1977 - 1980 (pages 19-22)

1. a) When President Jimmy Carter took office, he pledged to cut back defense spending on an annual basis of 5 - 7 billion dollars. Why?

   b) What impact would this decision have on employment in the United States?

2. What is meant by a comprehensive test ban?

3. What is the significance of Presidential Directive 59?

4. The Carter Administration authorized the deployment of two new missiles in Europe that could reach targets in the Soviet Union. What are the names of these missiles? What is the difference in their capabilities?

5. What is the significance of the Soviet SS-20 missile? What impact does it have on American nuclear weapons and arms control policy?

The Reagan Years: 1981 to Present (pages 23-26)

1. During his presidential campaign, President Reagan asserted that arms control might be facilitated by negotiating from a position of strength. Explain.

2. What is meant by the "zero option?"

3. How did the SALT negotiations differ from Reagan's approach in START? Which do you think is the most effective and why?

4. Do you think there would be any "winners" in a nuclear war? Why or why not?

5. What is meant by the "build-down" proposal?

6. What report on arms control agreements was issued in January 1984? By whom? And why?

International Concerns (pages 29-30)

1. How many nations belong to the Committee on Disarmament? In what city do they regularly meet?

2. What was the goal of the 1968 Treaty on NonProliferation of Nuclear Weapons?

3. Were any proposals made by other countries to participate in and expedite arms control? If so, what countries were they?

4. What is meant by a "mutual and verifiable freeze?"

5. Describe the origin and impact of the Freeze Movement.

TRUE OR FALSE

Indicate whether the statement is True or False. If the statement is FALSE, place correct answer in space after the statement.

1. ____ The Cuban Missile Crisis took place during the Nixon/Ford Years. ____________

2. ____ President Harry Truman authorized the use of two atomic bombs in 1945 against the Japanese cities of Tokyo and Nagasaki. ____________

3. ____ The hydrogen bomb is less powerful than the original atomic bomb. ____________

4. ____ The term "massive retaliation" is associated with the Eisenhower Years. __________

5. ____ The Cold War was a rivalry between the United States and Japan. __________

6. ____ John Foster Dulles was the Secretary of State during the Kennedy Administration. ____________

7. ____ The "missile gap" was a campaign issue during the 1960 campaign of President Johnson. ____________

8. ____ The strategy of "mutual assured destruction" (MAD) was adopted during the Nixon Administration. ____________

9. ____ The triad of strategic nuclear weapons includes: ICBMs, Heavy Bombers, and Submarine-Launched Ballistic Missiles (SLBMs). __________

10. ____ "Detente" is a strategy developed by Ford/Kissinger. ____________

11. ____ Gerald Ford met the Soviet General Secretary Leonid Brezhnev in Moscow in November 1974. ______________

12. ____ The SALT II Treaty was ratified in June 1979. __________

13. ____ The Federal Republic of Germany allowed both ground-launched cruise missiles and Pershing II missiles to be located in their country. ____________

14. ____ President Carter proposed a $180 billion 5-year strategic modernization program that would add 7,000 new weapons to the U.S. stockpile over 10 years. ____________

15. ____ "Zero-option" is associated with the Carter Administration. ___________

CATEGORY B
TRUE or FALSE - page 2

SECTION I

16. ______ START is the acronym for the Strategic Arms Limitation Talks.__________

17. ______ The total defense budget during the first year of the Reagan Administration was $176 billion.__________

18. ______ The strategy associated with the Kennedy/Johnson Administration was deterrence by "mutual assured destruction."__________

19. ______ War-Fighting strategy is associated with the Nixon Administration. __________

20. ______ The total defense budget at the beginning of the Truman Administration was $79.5 billion.__________

21. ______ The total defense budget in the last year of the Eisenhower Administration was $40.3 billion.__________

22. ______ The Secretary of Defense during the Carter Administration was Harold Brown.__________

23. ______ The Secretary of State who preceded George Shultz in the Reagan Administration was Richard Allen.__________

24. ______ Casper Weinberger was Secretary of Defense during the Carter Administration.__________

25. ______ The present National Security Advisor is Robert McFarlane.__________

26. ______ The National Security Advisor during the administration of President Jimmy Carter was Zbigniew Brzezinski.__________

27. ______ Robert McNamara was Secretary of Defense during the administration of President John F. Kennedy and Lyndon B. Johnson.__________

28. ______ Russian Yuri Andropov succeeded Konstantin Chernenko as General Secretary.__________

29. ______ The Committee on Disarmament has as its members only two countries - the United States and the Soviet Union.__________

30. ______ The Treaty on NonProliferation of Nuclear Weapons was signed in 1978.__________.

TRUE OR FALSE

ANSWERS

Question Number		Correct Answer
1.	False	Kennedy
2.	False	Hiroshima
3.	False	Hydrogen bomb is more powerful
4.	True	---
5.	False	Soviet Union
6.	False	Eisenhower
7.	False	Kennedy
8.	False	Kennedy
9.	True	---
10.	False	Nixon/Kissinger
11.	False	Port of Vladivostok
12.	False	Only signed
13.	True	---
14.	False	Reagan
15.	False	Reagan
16.	False	Strategic Arms Reduction Talks
17.	True	---
18.	True	---
19.	True	---
20.	True	---

CATEGORY B
ANSWERS to TRUE or FALSE - page 2

SECTION I

Question Number	Correct Answer
21. True	---
22. True	---
23. False	Alexander Haig
24. False	Reagan
25. True	---
26. True	---
27. True	---
28. False	Chernenko succeeded Andropov
29. False	Multinational
30. False	1968

MULTIPLE CHOICE

1. The Treaty on NonProliferation of Nuclear Weapons was signed in

   a) 1975
   b) 1968
   c) 1978
   d) 1983

2. On December 24, 1979, the Soviet Union launched a massive invasion of

   a) Poland
   b) Yugoslavia
   c) Afghanistan
   d) Hungary

3. The strategy adopted by the Eisenhower Administration was

   a) deterrence/mutual assured destruction
   b) margin of safety/war-fighting strategy
   c) massive retaliation
   d) none of the above

4. The Secretary of State during the Eisenhower Administration was

   a) John Foster Dulles
   b) Dean Rusk
   c) George Marshal
   d) Dean Acheson

5. 'Detente''is associated with the administration of

   a) Truman
   b) Eisenhower
   c) Nixon
   d) Reagan

6. The missiles that the Carter Administration authorized and NATO approved for deployment in Europe in late 1979 were

   a) Pershing I and Pershing II
   b) Pershing II
   c) Pershing II and Cruise Missiles
   d) none of the above

7. Missiles authorized by the Carter Administration to be deployed in Europe were intended as a response to a Soviet buildup of

   a) SS-19 missiles
   b) SS-11 missiles
   c) SS-20 missiles
   d) SS-18 missiles

8. President Reagan offered the Kremlin a build-down proposal that included:

   a) a halt to the development and deployment of new weapons
   b) greater reductions than in SALT II
   c) permission to develop and deploy new weapons based on a ratio of retiring warheads in the existing forces.
   d) none of the above

9. Following the conclusion of World War II, the wartime alliance between the U.S. and the Soviet Union deteriorated because:

   a) the Soviets tested a thermonuclear bomb
   b) the Soviets established puppet regimes in East European countries
   c) the U.S. announced a policy of massive retaliation
   d) none of the above

10. The SALT II Treaty consists of:

    a) the ABM Treaty
    b) the ABM Treaty and the Interim Agreement
    c) only the Interim Agreement
    d) none of the above

11. President Jimmy Carter ordered that the SALT II Treaty be placed on "hold" with no further attempt to gain Senate ratification because:

    a) he was tied up with the Iranian hostage situation
    b) he was getting ready for the 1980 elections
    c) the Soviets invaded Afghanistan
    d) none of the above

12. Ratification of a treaty in the United States requires:

a) two-thirds vote of approval by the House
b) two-thirds vote of approval by the Senate
c) two-thirds vote of approval by Congress
d) none of the above

13. When President Reagan agreed to offer the Soviets a "build-down" proposal, members of Congress agreed to support:

a) his proposal to increase personal income and corporate taxes
b) an increase in the national defense budget of twenty percent
c) the MX missile
d) none of the above

14. One reason that prevented the completion of a SALT II Treaty in either 1975 or 1976 was:

a) lack of agreement on the treatment of the cruise missile
b) the forthcoming presidential election in the United States
c) invasion of Afghanistan by the Soviet Union
d) none of the above

15. President Kennedy's philosophy on military forces differed from that of President Eisenhower in that President Kennedy believed in:

a) a flexible respone to possible military action by the Soviet Union
b) a zero-option approach
c) a massive retaliation military doctrine
d) a strategy regaining a margin of safety

16. The Baruch Plan that was proposed to the United Nations called for:

a) a reduction in the political and military rivalry between the U.S. and the U.S.S.R.
b) an international agency to ensure that atomic energy would be used solely for peaceful means
c) reduction and eventual elimination of nuclear weapons
d) none of the above

17. During his presidential campaign, Reagan proposed:

- a) to have a $180 billion five-year strategic modernization program
- b) to add 7,000 new weapons to the U.S. stockpile over a 10-year period
- c) to deploy the MX missile, but to cut the planned force from 200 to 100.
- d) all of the above

18. The U.S. Congress is deeply divided about the wisdom of a comprehensive freeze:

- a) the House of Representatives supports the freeze
- b) the Senate supports the freeze
- c) the Senate does not support the freeze
- d) none of the above

19. The Kennedy-Johnson Administrations saw the first major successes in nuclear arms control with the passage of:

- a) The Limited Test Ban Treaty
- b) The SALT I Treaty
- c) The SALT II Treaty
- d) Presidential Directive 59

20. The multinational Committee on Disarmament which meets regularly in Geneva, has attempted to generate agreements on

- a) comprehensive ban on nuclear testing
- b) prohibition of chemical weapons
- c) the cessation of the nuclear arms race at the earliest possible date
- d) all of the above

MULTIPLE CHOICE

ANSWERS

Question	Correct Answer
1	b - (1978)
2	c - (Afghanistan)
3	c - (massive retaliation)
4	a - (John Foster Dulles)
5	c - (Nixon)
6	c - (Pershing II and Cruise Missiles
7	c - (SS-20 missiles)
8	c - (permission to develop and deploy new weapons based on a ratio of retiring existing warheads)
9	b - (the Soviets established puppet regimes etc.)
10	d - (none of the above)
11	c - (the Soviets invaded Afghanistan)
12	b - (two-thirds vote of approval by the Senate)
13	c - (the MX missile)
14	a - (lack of agreement on the treatment of the cruise missile)
15	a - (a flexible response to possilbe military action
16	b - (an international agency to ensure that etc.
17	d - (all of the above)
18	c - (the Senate does not support the freeze
19	a - (The Limited Test Ban Treaty
20	d - (all of the above)

COMPLETION QUESTIONS

1. President Truman authorized the use of atomic bombs in the year__________against the Japanese cities of ______________ and __________.

2. The hydrogen or__________bomb is immensely more powerful than the original fission or atomic bomb.

3. Notwithstanding the doctrine of "massive retaliation," the Soviets suppressed the 1956 uprising of the _________ __________ __________.

4. The Soviet Union detonated its first atomic weapon in the year __________.

5. As a result of intelligence reports that revealed that the Soviets were actively at work on the development of the _________ ________, President Truman felt that he had no alternative but to take the next major step in the arms race.

6. In 1946, the ________ _________ was proposed to the United Nations in an effort to control nuclear weapons.

7. The political tension and military rivalry between the United States and the Soviet Union was known as the _________War.

8. John Foster Dulles, ____________Secretary of State, announced a policy of massive____________, a doctrine whereby the United States might respond with ___________weapons to any Soviet challenge any place in the world.

9. President Eisenhower appointed a cabinet level arms control advisor in the year___________.

10. In 1957, the United States was shocked when the Soviets launched the ____________satellite, the first to orbit the globe.

11. Under President _____________, the United States increased its bomber force and built intercontinental ballistic missiles (ICBMs).

12. By the end of the Eisenhower term, the United States had about ________nuclear weapons.

13. The Soviets, who in 1952 had no intercontinental bombers, no submarine-launched missiles, and no intercontinental ballistic missiles, had developed ____________ and ____________ by 1960.

14. President Kennedy came to office after a 1960 campaign in which he warned of a _________ _________.

15. In 1962, Nikita Khrushchev was quoted in a speech that if an atomic war occurred, ."The____."

16. The U.S. "triad" of strategic nuclear weapons includes ____________ __________ __________, strategic or __________ __________, and -launched __________ __________.

17. Unlike missile silos or bombers based on __________, which could be located and targeted by the Soviets, __________ were virtually invulnerable.

18. The best way to deter the adversary was to have the ability to retaliate with unacceptable consequences in the event of an attack. This strategy is known as__________ __________ __________.

19. The most serious confrontation between the United States and the Soviet Union occurred when Soviet leader __________attempted to place intermediate-range missiles in __________.

20. President __________responded by imposing a __________or __________ of naval ships around __________that resulted in the withdrawal of the Soviet nuclear missiles.

21. The first major successes in nuclear arms control occurred during the administrations of Presidents __________ and __________.

22. The Limited Test Ban Treaty, putting an end to __________tests of nuclear weapons, was completed in the year__________.

23. In 1963, the Soviet Union and the United States established the __________ to enable leaders of both countries to communicate at a time of crisis.

24. Artillery shells, bombs, and short-range missiles with nuclear warheads are called __________ nuclear weapons.

25. The Nixon/Kissinger concept of __________, a lessening of tensions, was that relations could be improved by involving the Soviets in a pattern of cooperative relationships such as cultural and trade exchanges...

26. Detente is not anything more than a moderation of rivalry; it is not a ____________ friendship.

27. Severely limited development and deployment of __________ __________ ballistic missiles, designed to destroy attacking missiles enroute to their targets, was agreed upon in May 1972.

28. In 1974, Secretary of Defense ____________ ____________ proposed greater emphasis on __________ capability, whereby American missiles would be developed, deployed, and targeted to carry out selective strikes against Soviet military targets.

29. At the 1974 meeting in Vladivostok, General Secretary Brezhnev accepted 1) the principle of ____________ ceilings of strategic weapons launchers; 2) deferral of the issue of American __________ - __________ weapons systems based on the periphery of the Soviet Union; and, 3) deferral of the issue of the ____________ bomber.

30. Completion of the SALT II Treaty in either 1975 or 1976 was prevented by two main factors: Lack of agreement on the treatment of __________ ____________ and the American ____________ situation.

31. President Carter took office with a pledge to cut back defense spending on an annual basis by $ __________ billion.

32. President Carter presented the Russians in March of 1977 with what was called a __________ package. It called for a __________ percent reduction in the Soviet large land-based missiles, the SS-________ but no deep cuts in those systems where the United States had the advantage, such as strategic bombers and submarine-launched missiles with ____________ warheads.

33. The SALT II Treaty was signed in June ________. It contained many elements of the comprehensive package but not at levels as low as the first Carter proposal and without reductions in the Soviet SS-__________ missiles.

34. In the summer of 1979, U.S. intelligence photos from a satellite revealed a _________ military brigade on maneuvers in Cuba.

35. In September 1979, President Jimmy Carter's Vice President, Walter Mondale on a visit to China, indicated United States' willingness to sell the Chinese ____________ - ____________ equipment.

36. On December 24, 1979, the Soviet Union launched a massive invasion of____________.

37. Presidential Directive ________ set forth a strategy of selective and flexible use of nuclear weapons based on the assumptions that perhaps the Soviet Union might start a ______________nuclear war. It called for the United States to be prepared to respond with selective strikes against various categories of Soviet ________ and ____________targets over a protracted period of time.

38. The Carter Administration authorized,and __________approved in late 1979, the deployment of the _____________ missile and the ground-launched__________ missile.

39. During his presidential campaign, President Reagan has suggested that the arms control issue might be facilitated by negotiating from a position of ___________.

40. President Reagan believed that the United States had fallen behind in the arms control race and therefore the priority task was to build up our strategic nuclear forces to regain a margin of _________.

41. Reagan proposed a $_________billion___________year strategic modernization program which would add___________thousand new weapons to the U.S. stockpile over __________years. He pledged to deploy the ___________missile but cut back the planned force from President Carter's original 200 to _________missiles.

42. The Reagan Administration changed the name of the Strategic Arms Limitation Talks (SALT) to ____________, the Strategic Arms ____________Talks.

43. The multi-national Committee on____________meets regularly in ____________.

44. The Treaty on NonProliferation of 1968 committed the nuclear superpowers "to achieve at the earliest possible date the _________ of the nuclear arms race and to undertake effective measures in the direction of nuclear ___________."

45. The United States Congress was deeply divided about the wisdom of a comprehensive _________.

COMPLETION QUESTIONS

ANSWERS

Question Number	Correct Answers
1	1945 - Hiroshima and Nagasaki
2	thermonuclear
3	Hungarian Freedom Fighters
4	1949
5	hydrogen bomb
6	Baruch Plan
7	Cold
8	Eisenhower's - retaliation - nuclear
9	1955
10	Sputnik
11	Eisenhower
12	6,200
13	bombers and ICBMs
14	missile gap
15	"survivors would envy the dead."
16	intercontinental ballistic missiles, heavy bombers, submarine-launched ballistic missiles
17	land -submarines
18	mutual assured destruction
19	Khrushchev - Cuba
20	Kennedy - quarantine or blockade -Cuba -withdrawal
21	Kennedy/Johnson
22	atmospheric - 1963
23	hotline
24	tactical
25	detente

CATEGORY D SECTION I

ANSWERS to COMPLETION QUESTIONS - page 2

Question Number	Correct Answers
26	moderation - synonym
27	defensive anti-
28	James Schlesinger - counterforce
29	equal - forward-based- Backfire
30	cruise missiles - political
31	$5 - 7
32	comprehensive - 50% - SS-18 - multiple
33	1979 - - SS-18
34	Soviet
35	military-related
36	Afghanistan
37	59 - limited - military and industrial
38	NATO - Pershing II - cruise
39	strength
40	safety
41	$180 - 5 - 7000 - 10 - MX - 100
42	START - Reduction
43	Disarmament - Geneva
44	cessation - disarmament
45	freeze

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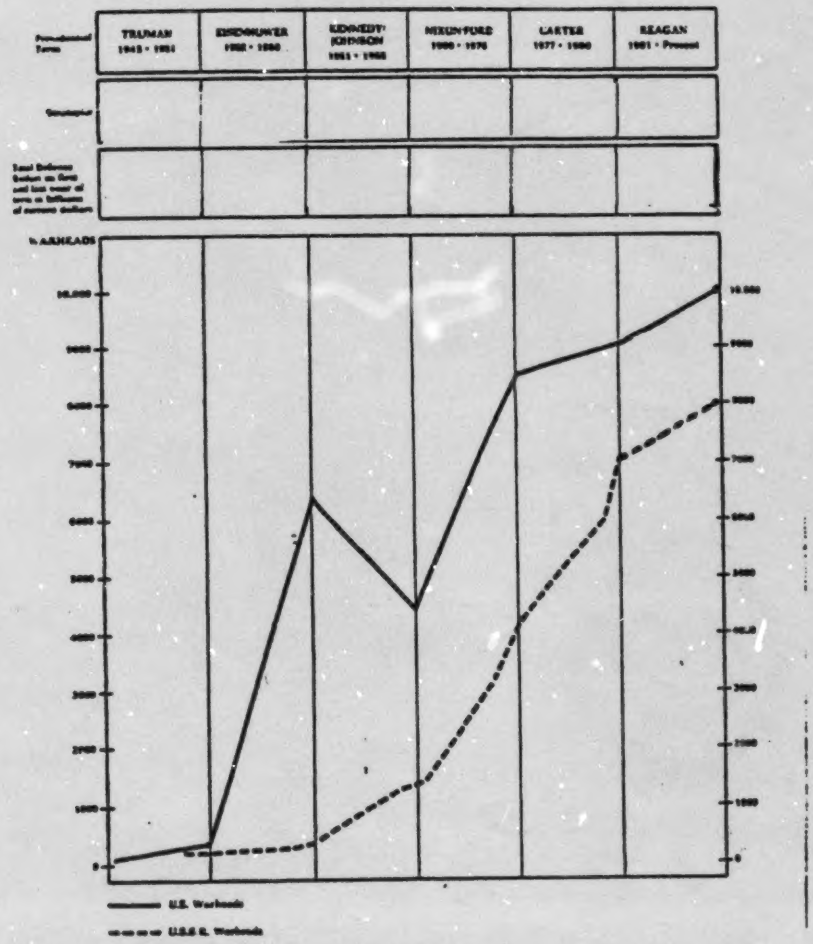
FILL-IN QUESTIONS

1. Fill in the missing strategies for each President.

2. Fill in the defense budget for the first and last year of each President in billions of current dollars.

The Nuclear Arms Competition



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3. Fill in the missing names indicated by an asterisk.

a) There is one blank to be filled in each U.S. Administration.

b) There are three blanks altogether in the Soviet Counterpart.

U.S. Administrations

1945 · 1952
President
Harry S. Truman
Secretary of State
James Byrnes
George Marshall
*
Secretary of Defense
James Forrestal
Louis Johnson
George Marshall
Robert Lovett
National Security Advisor
Sidney Souers

1953 · 1960
President
Dwight D. Eisenhower
Secretary of State
*
Christian Herter
Secretary of Defense
Charles Wilson
Neil McElroy
Thomas Gates
National Security Advisor
James Lay

1961 · 1968
President
John F. Kennedy
Secretary of State
Dean Rusk
Secretary of Defense
*
National Security Advisor
McGeorge Bundy
Lyndon B. Johnson
Secretary of State
Dean Rusk
Secretary of Defense
Robert McNamara
Clark Clifford
National Security Advisor
McGeorge Bundy
Walter Rostow

1969 · 1976
President
Richard Nixon
Secretary of State
William Rogers
Henry Kissinger
Secretary of Defense
Melvin Laird
Elliott Richardson
James Schlesinger
National Security Advisor
*
Gerald Ford
Secretary of State
Henry Kissinger
Secretary of Defense
James Schlesinger
Donald Rumsfeld
National Security Advisor
Brent Scowcroft

1977 · 1980
President
Jimmy Carter
Secretary of State
Cyrus Vance
Edmund Muskie
Secretary of Defense
*
National Security Advisor
Zbigniew Brzezinski

1981 ·
President
Ronald Reagan
Secretary of State
Alexander Haig
George Shultz
Secretary of Defense
Caspar Weinberger
National Security Advisor
Richard Allen
William Clark, Jr.
*

Soviet Counterpart

1940s · 1953
General Secretary
Josef Stalin
Foreign Minister
Vyacheslav Molotov
Defense Minister
Josef Stalin
Nikolai Bulganin
Alexander Vasilevskiy

1954 · 1963
General Secretary
Nikita Khrushchev
Foreign Minister
Vyacheslav Molotov
*
Defense Minister
Nikolai Bulganin
Georgi Zhukov
Rondion Malinovski

1964 · 1982
General Secretary
Leonid Brezhnev
Foreign Minister
Andrei Gromyko
Defense Minister
Rondion Malinovski
Andrei Grechko
Dimitri Ustinov

1983 · 1984
General Secretary
Yuri Andropov
Foreign Minister
*
Defense Minister
Dimitri Ustinov

1984 ·
General Secretary
Konstantin Chernenko
Foreign Minister
*
Defense Minister
Dimitri Ustinov

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FILL-IN QUESTIONS

ANSWERS

Page 26

Question No. 1

Question No. 2

Strategy		massive retaliation	deterrence "mutual assured destruction"	deterrence "mutual assured destruction" + counterforce	deterrence "mutual assured destruction" + counterforce	margin of safety war-fighting strategy
Total Defense Budget in first and last year of term in billions of current dollars.	1945 79.5 — 1951 45.1	1952 57.1 — 1960 48.3	1961 44.6 — 1968 75.8	1969 77.8 — 1976 106.7	1977 110.9 — 1980 142.2	1981 176.1 — 1984 273.8

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U.S. Administrations

1. Dean Acheson
2. John Foster Dulles
3. Robert McNamara
4. Henry Kissinger
5. Harold Brown
6. Robert McFarlane

Soviet Counterpart

1. Andrei Gromyko
2. Andrei Gromyko
3. Andrei Gromyko

TEACHING AIDS

The following are teaching approaches you may wish to consider.

1. The use of films or filmstrips from your school library or through inter-library loan on the 1945 hydrogen bombing of Japan.

   After showing the film, a discussion could take place on such topics as:

   a) Why did President Truman approve the dropping of the hydrogen bomb on Hiroshima and Nagasaki? Why these two cities in particular?

   b) Was this the "best" way to hasten the end of the war?

   c) Did it save lives as compared with an American invasion of Japan?

2. Haveaguest lecturer address the class on arms control. Also consider having a political scientist talk to your class on the political implications of arms control.

3. Group reports (three to a team) on topics such as:

   a) Compare the arms control policy of President Carter and President Reagan.

   b) The Salt I Agreements.

   c) Why the SALT II Treaty was signed and not ratified.

   d) The impact of an administration's political ideology on arms control negotiations.

   These reports, that should optimally be about thirty minutes in length, may be graded on the following criteria:

   - depth of library research
   - class interest and questions from the students
   - creativity in presenting their position
   - effective use of data, graphs, and the language of arms control

4. Have students keep a running account on the contents of this section from newspapers such as The New York Times, or Time, Newsweek, and U.S. News and World Report magazines to be discussed in class the first meeting of each week.

5. Have students prepare biographical sketches for oral presentation on each of the eight presidents discussed in this section.

6. Also consider biographical sketches of key administration figures such as Robert McNamara, Dean Acheson, Dean Rusk, Henry Kissinger, Caspar Weinberger, and George Shultz, etc.

7. Have students prepare book reviews on newly published accounts on the nuclear weapons and arms control subject. Research Strobe Talbott's - Deadly Gambits.

8. Write the U.S. Arms Control and Disarmament Agency for unclassified material to have students give reports on the subject matter. Also write to the House Armed Services Committee for similar type reports.

9. Have students listen to Presidential news conferences and report in class on questions asked on "nuclear weapons and arms control."

10. In groups of six, have three students role play at being the U.S. President, Secretary of State and Secretary of Defense - and three at being the Soviet Leader, Defense Minister, and Foreign Minister. They could be graded according to which Presidential group accomplished more with the Soviet Leadership towards nuclear disarmament.

TOPICS FOR A DEBATE

1. The United States should adopt a comprehensive freeze policy in nuclear weapons and arms control.

2. The Carter Administration's strategic nuclear weapons policy was more effective than that of Nixon/Ford; than that of the Reagan Administration.

3. The Cuban Missile Crisis: Fact or Fiction.

4. The United States should abandon the "triad" as the basis of its strategic weapons program.

5. United States vis-a-vis Soviet Union policy on nuclear weapons and arms control for the time periods:

   a) 1945 - 1955
   b) 1956 - 1966
   c) 1967 - 1977
   d) 1977 - 1984

6. During the first three years of the Reagan Administration, there have been three National Security Advisors: namely, Richard Allen, William Clark, Jr., and Robert McFarlane. Why has there been such a turnover of National Security Advisors? The Soviets have relatively few serving in security posts. Why is there such a contrast? Is it due to their ideology or their political system?

LIBRARY RESEARCH ASSIGNMENTS

1. Compare and contrast the arms control approach taken by Secretary of Defense Robert McNamara during the administrations of President John F. Kennedy and Lyndon B. Johnson, with that of Caspar Weinberger during the Reagan Administration.

2. Why did Alexander Haig resign as Secretary of State after serving only one and one-half years with the Ronald Reagan Administration. Research Alexander Haig's recent book, Caveat.

3. Chronologically trace the events that led to the successful signing of the SALT I Treaty.

4. Describe the function of the U.S.Arms Control and Disarmament Agency.

   a) Give the reasons leading to its creation.
   b) Draw an organizational structure chart of the Agency.
   c) List the various Directors of the Agency.
   d) Prepare biographical sketches of the most prominent Directors of the agency.

5. How are names chosen for weapon missiles? Cite at least five examples.

6. Analyze the U.S. Federal Budget outlay for "national defense expenditures" for the time period 1945 - 1984. What percent of total budget outlays goes for defense each year? (You may wish to use the Economic Report of the President for this data)

7. Draw a graph indicating the number of strategic nuclear weapons in the U.S. arsenal from 1945 to 1984. Write comments on the trend of your graphic analysis.

Section II

OVERVIEW

Section II of this book consists of thirty-two pages and provides the core of technological information about nuclear weapons. The author carefully describes the various characteristics of nuclear weaponry, their destructive power and existing stockpiles.

Terms used frequently in arms control debates such as strategic stability, strategic deterrence, launch-on-warning, and launch-under-attack are clearly explained. A report on False Alarms by the Senate Armed Services Committee is recounted.

The two types of missiles, ballistic and cruise, and their various components are illustrated. The three most commonly recognized nuclear weapon categories; namely, Tactical Nuclear Weapons, Intermediate-Range Nuclear Weapons, and Strategic Nuclear Weapons are simply and succinctly described to enable the instructor to cope with the complexities of this subject. The ongoing controversy of the MX is thoroughly reviewed as are the findings of the Scowcroft Commission. Actual photographs help the reader to visualize the intricate silo system and the actual launching of a missile.

Also included in this section are two maps which serve as useful springboards for class discussions:

1. World Map indicating NATO and WARSAW PACT countries and other countries in the process of acquiring or actually possessing nuclear capability.
2. Map of Europe indicating the types of weapons placed in NATO countries and the Soviet bloc.

Tables of strategic and intermediate-range forces compare those of the United States and the Soviet Union.

Various alternate defense systems, that have been contemplated in response to the nuclear threat, and the feasibility of such systems are summarized briefly.

Finally, necessarily using unclassified information, a chapter on the "Authority to Release Nuclear Weapons" describes the various command centers involved in the Command, Control, and Communications (C^3) structure, their functions and logistics, and how they interrelate. It provides relevant detail on the procedures beginning with the military aide who accompanies the President at all times carrying the Black Bag.

Because this section of the book will require more time and effort, the student will become more knowledgeable and better able to grasp the significance of the relevant articles in the newspapers and magazines, the debates and discussions on television, and the Presidential news conferences on this once arcane and now most important issue of our time.

ESSAY

1. Would resumption of the Nixon policy of "detente" with the Soviet Union reduce or intensify the arms race? Why or why not?

2. Trace the origin of nuclear weapons beginning with the Manhattan Project. Discuss the reasons for so much controversv.

3. Discuss the factors that led to the passage of the War Powers Act of 1973. Should the Act be amended? Rescinded? Why or why not?

4. What impact, if any, did the succession of Konstantin Chernenko upon the death of Yuri Andropov in February 1984 have upon the arms control talks between the Soviet Union and the United States?

5. Evaluate the structure of the American defense systems. Do you perceive any flaws or areas that need better control?

6. Albert Einstein has been quoted, "If I had known that the Germans would not have succeeded in constructing the atom bomb, I would never have lifted a finger." What prompted him to make such a statement?

7. Identify the following:

   a) stable deterrence
   b) nuclear warhead
   c) fratricide effect
   d) a reentry vehicle

8. Define the two general types of missiles.

9. Define the three categories of nuclear weapons.

10. Describe the four types of weapons that U.S. heavy bombers can carry.

11. Discuss in detail the "procedure" to release nuclear weapons should an event lead to such action.

12. Explain in detail the C^3 structure.

13. Give specific examples of "False Alarms" of a nuclear attack that occured in 1979 and 1980. What steps should be taken to prevent such false alarms occuring?

14. Draw and explain the trajectory path of a ballistic missile.

15. Draw and explain the trajectory path of a cruise missile.

16. Why has the Soviet Union opted for land-based missiles as the major nuclear weapon in its arsenal?

17. Explain the structure and purpose of the MX missile? Is it more accurate than other U.S. land-based missiles in the U.S. inventory? Is this desirable? Why or why not?

18. What is meant by the term "Dense Pack?" Do you think it is a feasible strategy? Why or why not?

19. Why was the Scowcroft Commission created? What were its recommendations? Do you agree with their recommendations? State why you do or do not agree?

20. Is the exact strategic balance in nuclear weapons difficult to measure between the two superpowers? Explain.

21. What is the distinction between intermediate-range nuclear weapons and strategic nuclear weapons.

22. Discuss the controversies that took place in the Intermediate Nuclear Forces - INF Talks.

23. What did President Reagan mean in setting forth a strategy of "nuclear superiority" over the Russians? Has he achieved his goal? Why or why not?

24. Distinguish between the two terminologies: "launch-on-warning" and "launch-under-attack."

25. What is meant by achieving a situation of "strategic stability?" Is it possible or impossible to achieve such a goal? Explain.

26. Compare the destructive power of the bombs that were dropped on Hiroshima and Nagasaki to those presently in the U.S. stockpile.

27. The U.S. decided to deploy missiles in Europe. Explain why you approve or disapprove of this action.

28. The U.S. chose to build smaller solid-fueled land-based missiles? Do you agree or disagree with this choice? Give your reasons.

29. Why has communicating with the U.S. strategic submarines always posed the grave risk of accident? What actions have been taken to rectify this weakness?

30. What are the difficulties involved with the procedures of the "Authority to Release Nuclear Weapons?" How would you resolve these difficulties?

31. Compare the role of the following in the U.S. Command Structure:

    a) The National Military Command Center
    b) The Alternate Military Command Center
    c) The North American Aerospace Defense Command
    d) Strategic Air Command

32. Carefully explain each of the operational steps that must be taken to activate a Minuteman missile.

33. Define "Gold Codes" and "SIOP."

34. a) What nations, other than the superpowers, have gained the capability to build and acquire nuclear weapons?

    b) Should this fact be of concern to the superpowers? Why or why not?

35. Which weapons are categorized as Intermediate-Range Theater Nuclear Weapons?

36. Compare the composition of the U.S. Intercontinental Ballistic Missiles (ICBMs) arsenal to that of the Soviet Union.

37. Compare the composition of the U.S. Submarine-Launched Ballistic Missiles (SLBMs) arsenal to that of the Soviet Union.

38. Compare the composition of the U.S. Heavy or Strategic Bombers to those in the Soviet Union's arsenal.

39. Overall, does the United States or the Soviet Union lead in the number of warheads in their nuclear arsenal?

40. Describe the "shell game" method? Is it a costly procedure? Is it effective? Explain.

41. Explain the four approaches the U.S. has adopted with respect to defense systems against nuclear attack.

42. How does a ballistic missile differ from a cruise missile?

43. Is there a major difference between tactical and intermediate-range nuclear weapons? If so, what is that difference?

44. What effort did President Reagan endorse in 1983 to solve the problems associated with an ABM defense?

45. Critics of new space-based weapons claim they can be readily countered. By what means is this possible?

TRUE or FALSE

Indicate whether the statement is True or False. If the statement is FALSE, place correct answer in space after the statement.

1. ______ Some nuclear weapons have greater explosive power than all the bombs dropped in World War II.__________

2. ______ The two bombs used in the devastation of Hiroshima and Nagasaki each had the explosive force of 43,000 tons of conventional TNT.__________

3. ______ One kiloton is equal to 2,000,000 pounds.__________

4. ______ One megaton is equal to 2,000 kilotons.__________

5. ______ The United States has a current stockpile of nuclear weapons estimated to have the destructive power of several thousand megatons distributed in approximately 46,000 nuclear warheads of all kinds.__________

6. ______ A conservative calculation predicts that 400 kilotons would be sufficient to destroy most of an adversary's industrial base and immediately kill hundreds of millions of people.__________

7. ______ The stalemate between the arsenals of destruction is referred to as a situation of "strategic stability."__________

8. ______ "Launch-on-warning" involves the launch of nuclear weapons on first indication from satellites and other warning systems that the other side's missiles were headed for its targets in the United States or the Soviet Union.__________

9. ______ A report prepared by the Senate Armed Services Committee attests to 2700 false alarms from January 1979 to June 1980.__________

10. ______ In 1979, an operator mistake at SAC headquarters inside Cheyenne Mountain in Colorado transmitted and relayed to NORAD fighter bases an erroneous message - the United States was under nuclear attack.__________

CATEGORY B
TRUE or FALSE - page 2

11. _____ A nuclear weapon is an explosive device that uses the power of the atom.__________

12. _____ Enormous power is released by either the splitting apart (fusion) or fusing together of atomic nuclei.__________

13. _____ Atomic weapons, created by the United States during the Second World War, were based on the principle of fission.______

14. _____ Hydrogen weapons were developed by the United States in 1952 and utilized only fission.__________

15. _____ A missile is a vehicle that can deliver an "explosive device" (warhead) to a target from distances up to thousands of miles.__________

16. _____ The ballistic missile is a pilotless airplane, about 20 feet long, with wings, a tail, a jet engine, and a computer that acts as a pilot.__________

17. _____ Cruise missiles fly low adjusting to the terrain, are hard to spot on radar, and are considered to be extremely accurate.__________

18. _____ A "warhead" contains the fuse and materials that create the atomic explosion.__________

19. _____ A "reentry vehicle" is that portion of the missile that carries and houses the warhead.__________

20. _____ Large ballistic missiles can carry only five warheads.________

21. _____ Currently planned cruise missiles have only single warheads.________

22. _____ Tactical Battlefield Nuclear Weapons (TACNUCS) are short-range, typically 100 miles or less, low-yield (usually 100,000 tons of TNT) nuclear weapons.__________

23. ______ An Intermediate-Range Nuclear Weapon also known as Long-Range Theater Nuclear Weapon has a range of approximately 500 miles.__________

24. ______ Tactical or Battlefield Nuclear Weapons would be used only in a virtually all-out war involving NATO and WARSAW PACT forces.__________

25. ______ Intermediate-Range Nuclear Weapons have become increasingly accurate and can be delivered only by land-based missiles.__________

26. ______ In response to a continuing Soviet buildup in its new intermediate-range nuclear weapons - the SS-18, the NATO Defense Ministries in late 1979 decided to pursue a dual strategy of modernization and arms control.__________

27. ______ In late 1979, the United States deployed 1008 Pershing II ballistic missiles and 460 ground-launched cruise missiles in Western Europe.__________

28. ______ The three principal strategic weapons systems with sufficient range to reach Soviet and American targets are: 1) ICBMs; 2) SLBMs; 3) Heavy or Strategic Bombers.__________

29. ______ The United States leads in megatonnage; the Soviet Union in warheads.__________

30. ______ Since the late 1950's, the United States has opted to build larger solid-fueled land-based missiles.__________

31. ______ The Soviets have emphasized modern intercontinental-range bombers in their nuclear weapons arsenal.__________

32. ______ Most experts agree that the United States does not lead in long-range bombers, cruise missiles, missile accuracy, or has better submarine-launched ballistic missiles and missile-carrying submarines.__________

CATEGORY B
TRUE or FALSE - page 4

33. ______ An ICBM is a land-based rocket-propelled vehicle capable of intercontinental range of about 1000 nautical miles.________

34. ______ An ICBM is stored or housed in a silo, a vertical underground launcher.__________

35. ______ A Submarine-Launched Ballistic Missile is a ballistic missile launched from a submarine only when it is submerged._________

36. ______ The SLBM is stored, or housed, and launched from a tube._______

37. ______ The newest American ICBM is the MX missile which is planned to carry twenty nuclear warheads.__________

38. ______ Each warhead on the MX missile can reach a different target and the destination of each warhead can be changed by adjusting the program that the missile is to follow.__________

39. ______ The Soviet Union already has ICBMs larger than the MX; namely, the SS-20.__________

40. ______ In 1979, President Ford announced a decision to go ahead with the MX missile and a complicated "shell game" method of deployment.__________

41. ______ In November 1982, President Reagan announced his intention to base the MX in a configuration known as "Dense Pack."______

42. ______ Located in Wyoming, the Dense Pack field would be a 10 mile long rectangle, housing 500 MX missiles, spaced 1900 feet apart in silos hardened against nuclear effects.__________

43. ______ The combined effects of the blast waves, radiation, and airborne debris caused by the explosion of the first arriving warheads would destroy the latecomers in what is called a "fratricide" effect.

44. ______ The Scowcroft Commission which reviewed MX basing alternatives and other strategic issues concluded that 100 MX missiles should be based in the existing Minuteman silos.__________

45. _____ The Scowcroft Commission concluded that the threat to U.S. strategic forces by Soviet land-based missiles had not been exaggerated._________

46. _____ Certain nuclear weapons systems are intended only for defensive purposes.__________

47. _____ President Nixon and General Secretary Brezhnev signed the ABM Treaty on May 26, 1972 which limited both nations to two anti-ballistic missile sites.__________

48. _____ In 1983, President Reagan endorsed a major research and development effort to solve the varied problems associated with an ABM defense.__________

49. _____ The line of authority to release nuclear weapons runs from the President to the Secretary of Defense.

50. _____ Under the Constitution of the United States, the Congress has the power to declare war, but as Commander-in-Chief, the President has primary responsibility for the defense of the United States. __________

51. _____ The War Powers Act of 1973 gives the President the authority to conduct a war - conventional or nuclear - for 60 days without Congressional approval.__________

52. _____ The greatest degree of control and direction exists with respect to the use of intercontinental ballistic missiles and strategic bombers under the Strategic Arms Command._______

53. _____ C^3 stands for Command Center and Control.

54. _____ Alternate Military Command Center (ALMCC) is located deep in a mountain in Pennsylvania (Raven Rock).

55. ______ Camp David has an underground emergency operations center, that can serve as a nuclear war command post, and is linked by a buried cable to the post in Raven Rock.__________

56. ______ North American Aerospace Defense Command (NORAD) is buried deep inside the Blue Ridge Mountains in Virginia. __________.

57. ______ NORAD is an Air Force command effectively linked with SAC but serves as a separate organization with the responsibility for air defense against Soviet attack.__________

58. ______ The SAC Commander does not have the authority to launch a bomber force to prevent its destruction on the ground by attacking missiles.__________

59. ______ The increased range of the Trident I or C^4 submarine-launched ballistic missile has not ameliorated the communications difficulty.__________

60. ______ Once the land-based missile is fired, there is no recall.__________

TRUE or FALSE

ANSWERS

Question Number	Correct Answer
1. True	---
2. False	13,000 tons
3. True	---
4. False	1,000 kilotons
5. False	26,000 nuclear warheads
6. False	400 megatons
7. False	stable deterrence
8. False	Launch-under-attack
9. False	3700 false alarms
10. False	at NORAD headquarters
11. True	---
12. False	(fission)
13. True	---
14. False	fission and fusion
15. True	---
16. False	cruise missile
17. True	---
18. True	---
19. True	---
20. False	ten or more warheads

Question Number		Correct Answer
21.	True	---
22.	True	---
23.	False	1,000 to 2,500 miles
24.	False	Intermediate-Range Nuclear Weapons
25.	False	Submarines,surface ships, & aircraft
26.	False	SS-20
27.	False	108 Pershing IIs; 464 cruise
28.	True	---
29.	False	U.S. leads in warheads; Soviet Union in megatonnage
30.	False	smaller
31.	False	intercontinental-range land-based ballistic missiles
32.	False	does lead
33.	False	4000 nautical miles
34.	True	---
35.	False	surfaced or submerged
36.	True	---
37.	False	ten warheads
38.	True	---
39.	False	SS-18
40.	False	President Carter

CATEGORY B
ANSWERS to TRUE or FALSE - page 3

Question Number	Correct Answer
41. True	---
42. False	14 mile; 100 MX; 1800 feet
43. True	---
44. True	---
45. False	had been exaggerate
46. True	---
47. True	---
48. True	---
49. False	to the Vice President
50. True	---
51. True	---
52. True	---
53. False	Command,Control, and Communications
54. True	---
55. True	---
56. False	Cheyenne Mountains, Colorado
57. True	---
58. False	does have the authority
59. False	has ameliorated
60. True	---

MULTIPLE CHOICE

1. The United States has a current stockpile of nuclear warheads of approximately:

   a) 26,000
   b) 24,000
   c) 10,000
   d) none of the above

2. One kiloton equals:

   a) 100 tons
   b) 1,000 tons
   c) 10,000 tons
   d) none of the above

3. A nuclear weapon is an explosive device that uses the power of an atom that is released by:

   a) only splitting apart (fission) of atomic nuclei
   b) only fusing together (fusion) of atomic nuclei
   c) either the splitting apart (fission) or fusing together (fusion) of atomic nuclei
   d) none of the above

4. A warhead contains the fuse and material that create:

   a) the fission
   b) the fusion
   c) the atomic explosion
   d) none of the above

5. The War Powers Act of 1973 gave the President authority to:

   a) declare war any time he deems events warrant such action
   b) conduct a war for 60 days without Congressional approval
   c) conduct war for 30 days without Congressional approval.
   d) none of the above

6. The National Command and Control System was created in the early 1960s as a result of a conclusion reached by:

a) A Senate Subcommittee
b) The Joint Chiefs of Staff
c) The National Security Advisor
d) none of the above

7. The C^3 structure consists of:

a) Checklist, Control, Communications
b) Command, Control, Communications
c) Command, Control, Center
d) none of the above

8. Which of the following is not part of the TRIAD:

a) ICBMs
b) SLBMs
c) TTBT
d) Heavy Bombers

9. The MX missile is considered to be:

a) an ICBM
b) an IRBM
c) an SLBM
d) an INF

10. Weapons that can be carried by the U.S. Heavy Bomber are:

a) nuclear gravity bombs
b) long-range attack missiles
c) air-launched attack missiles
d) none of the above

11. The Multiple Independently-Targetable Reentry Vehicle (MIRVs) technology carries:

a) one warhead
b) five warheads
c) ten or more warheads
d) none of the above

12. The means by which the President of the United States directs the use of nuclear weapons starts with the so-called:

    a) Gold Codes
    b) Black Bag or Football
    c) SIOP
    d) none of the above

13. The Scowcroft Commission recommended that:

    a) two hundred MX missiles should be based in the existing Minuteman silos.
    b) the U.S. proceed to develop a new multiple-warhead missile which would not pose as much of a threat nor be as attractive a target as the MX
    c) President Reagan not change his negotiating proposals with the Soviets
    d) none of the above

14. The Soviet Union already has ICBMs larger than the U.S. MX missile, namely:

    a) the SS-18
    b) the SS-19
    c) the SS-11
    d) none of the above

15. An ICBM is a land-based rocket-propelled vehicle capable of intercontinental range and stored or housed in a silo which is:

    a) a horizontal underground launcher
    b) a vertical underground launcher
    c) located above ground
    d) none of the above

16. Most experts agree that the U.S. leads in :

    a) only long-range bombers
    b) long-range bombers and cruise missiles
    c) long-range bombers, cruise missiles, and missile accuracy
    d) none of the above

17. Strategic nuclear weapons, launched either from the United States or the Soviet Union, have sufficient range to destroy:

    a) only military targets in the other side's homeland
    b) military, industrial, and urban targets in the other side's homeland
    c) only military and urban targets in the other side's homeland
    d) none of the above

18. Under the Constitution of the U.S., Congress has the power to declare war, but as Commander-in-Chief, the President has the primary responsibility for:

    a) preparation of the budget
    b) the defense of the United States
    c) the defense of the United States and NATO countries
    d) none of the above

19. The United States Strategic Arsenal consists of:

    a) 1040 ICBMs; 568 SLBMs; 326 Heavy Bombers
    b) 1050 ICBMs; 560 SLBMs; 320 Heavy Bombers
    c) 1398 ICBMs; 962 SLBMs; 260 Heavy Bombers
    d) none of the above

20. The Soviet Union Strategic Arsenal consists of:

    a) 1040 ICBMs; 568 SLBMs; 326 Heavy Bombers
    b) 1350 ICBMs; 562 SLBMs; 360 Heavy Bombers
    c) 1398 ICBMs; 962 SLBMs; 260 Heavy Bombers
    d) none of the above

MULTIPLE CHOICE

ANSWERS

Question Number	Correct Answer
1	a - (26,000 warheads)
2	b - (1,000 tons)
3	c - (either the splitting apart (fission) or fusing together (fusion) of atomic nuclei
4	c - (atomic explosion)
5	b - (conduct a war for 60 days without Congressional approval)
6	b - (the Joint Chiefs of Staff)
7	b - (Command, Control, Communications)
8	c - (TTBT)
9	a - (ICBM)
10	a - (nuclear gravity bombs)
11	c - (ten or more warheads)
12	b - (Black Bag or Football)
13	d - (none of the above)
14	a - (SS-18)
15	b - (a vertical underground launcher)
16	c - (long-range bombers, cruise missiles, and missile accuracy)
17	b - (military, industrial, and urban targets in the other side's homeland)
18	b - (the defense of the United States)
19	a - (1040 ICBMs;568 SLBMs; 326 Heavy Bombers)
20	c - (1398 ICBMs;962 SLBMs; 260 Heavy Bombers)

COMPLETION QUESTIONS

1. "If I had known that the ______________ would not succeed in constructing the atom bomb, I would never have lifted a finger." Albert Einstein.

2. Thirty-seven years after the first nuclear explosion, the control of nuclear weapons has become the most essential element in American _________ _________.

3. Some nuclear weapons have greater explosive power than all the bombs dropped in World War _________.

4. The two bombs used in the devastation of ___________ and ___________ each had the explosive force of __________ tons of conventional TNT.

5. One kiloton equals __________ tons or _________ pounds.

6. One megaton equals __________ kilotons or __________ tons or __________ pounds.

7. The United States has a current stockpile of nuclear weapons estimated to have the destructive power of several thousand megatons distributed in approximately __________ nuclear warheads of all kinds.

8. A conservative calculation predicts that ___________ megatons would be sufficient to destroy most of an adversary's industrial base and immediately kill hundreds of millions of people.

9. Most observers believe a major conflict between the superpowers has been avoided because both have recognized the catastrophic consequences of a ___________ _____________.

10. The stalemate between the arsenals of destruction is referred to as a situation of ___________ ___________.

CATEGORY D
COMPLETION QUESTIONS - page 2

11. __________ __________ is a balance of forces whereby neither side feels threatened and where pressures to arm are decreased.

12. If the nuclear arms race continues uncontrolled, the increased accuracy of nuclear weapons may alter the conditions of __________ __________.

13. As each side's forces become increasingly vulnerable, the impulse to use nuclear weapons rather than risk losing them will become greater, especially at a time of great crisis when there are indications of military preparations on both sides. This is described as a __________ __________ __________ strategy.

14. A report prepared by the __________ __________ __________ __________ attests to 3703 false alarms from January 1979 to June 1980 which were routinely assessed and dismissed.

15. In 1979, an operator mistake at NORAD headquartered inside __________ __________ in __________ transmitted and relayed to NORAD fighter bases an erroneous message - the United States was under nuclear attack.

16. A __________ __________ is an explosive device that uses the power of the atom.

17. Enormous power is released by either the splitting apart (__________) or fusing together (__________) of atomic nuclei.

18. Atomic weapons, created by the United States during the Second World War were based on the principle of __________.

19. __________ bombs were developed by the United States in 1952 and utilize __________ as well as __________.

20. Most weapons built today are __________ bombs.

21. A missile is a vehicle that can deliver an explosive force (______) to a target from distances up to thousands of miles.

22. There are ________general types of missiles.

23. A Ballistic Missile is a missile that is fired into a ________or path outside the earth's atmosphere and is then pulled down on its targets under the influence of________.

24. A Cruise Missile is a ________ ________, about 20 feet long with wings, a tail, a jet engine, and a computer that acts as a ________.

25. Cruise missiles fly adjusting to the terrain, are hard to spot on __________ and are considered to be extremely accurate.

26. A__________contains the fuse and materials that create the atomic explosion.

27. A________ __________(___) is that portion of the missile that carries and houses the warhead.

28. The________ ________is propelled beyond the earth's atmosphere; at the end of its flight, it__________the earth's atmosphere and hits the target.

29. Some Ballistic Missiles carry only_______reentry vehicle; others carry__________, each of which can be directed with high accuracy to widely separated targets.

30. MIRVs are Multiple __________-_________ Re-entry_________.

31. Large Ballistic Missiles can carry ________ or more warheads.

32. Currently planned Cruise Missiles have_______warhead(s).

33. The three most commonly recognized categories of nuclear weapons, according to progressively increased ranges, are:________________ ____________________, and ____________________.

34. __________ or __________ __________ __________ (__________) are short-range, typically 100 miles or less, low-yield (usually well below __________ tons of TNT) nuclear weapons designed for combat ue on the battlefield.

35. NATO contemplates use of __________ nuclear weapons to defeat a massive conventional attack by __________ __________ forces.

36. Intermediate-Range Nuclear Weapons - also known as Long-Range __________ Nuclear Weapons are of longer range and larger yield than a Tactical or Battlefield Nuclear Weapon, and would be used only in virtually all-out war involving __________ and __________ __________ forces.

37. Intermediate-Range nuclear weapons have become increasingly accurate and can be delivered by __________ - __________ missiles __________ and __________ ships, as well as by __________.

38. In response to a continuing Soviet buildup in its new Intermediate-Range Nuclear Weapons - the __________, NATO Defense Ministries in late 1979 decided to pursue a __________ strategy of modernization and arms control.

39. Missiles deployed in Europe consist of 108 __________ ballistic missiles and 464 __________ - __________ in Western Europe.

40. Statements by U.S. officials about possible limited nuclear war have fueled a strong __________ - __________ movement in Western Europe.

41. __________ nuclear weapons are weapons that, when launched from either the U.S. or the U.S.S.R.,have sufficient range to destroy military, industrial, and urban targets in the other side's homeland.

42. The three principal weapons systems with sufficient range to reach Soviet and American targets are: __________, __________, __________ __________.

43. The United States leads in__________; the Soviet Union leads in __________.

44. The Soviets have long emphasized______________missiles.

45. Today, most experts agree that the United States leads in long-range bombers, ___________missiles, missile accuracy, and has better submarine-launched ballistic missiles and missile-carrying submarines.

46. Experts also agree that the Soviet Union leads in the number of__________ and ___________-based missiles, the lifting power (or throw-weight) of those missiles, the explosive power (megatonnage) of their nuclear weapons, as well as the number of__________submarines.

47. The three strategic nulcear weapons that form the U.S. triad are: _________________________, _________________________ and ________________.

48. An ICBM is a ___________- ___________ rocket-propelled vehicle capable of intercontinental range in excess of 4000 nautical miles.

49. An ____________is stored or housed in a silo, a vertical underground launcher.

50. Deployment of ICBMs on__________launchers is under consideration by both superpowers.

51. An_________is a ballistic missile launched from a submarine either surfaced or ___________. It is stored, or housed, and launched from a__________.

52. A__________ ____________ is a military aircraft designed to deliver nuclear or non-nuclear weapons against targets on the ground.

53. The___________ ______________can fly strategic missiles at ____________distances.

54. Weapons that can be carried by U.S. Heavy Bombers are:____________ _______________ and ________________.

55. A Short-Range Attack Missile is a guided missile with a range of approximately __________ miles.

56. The first three stages of the MX use ____________ propellant and thrust the missile into intercontinental range.

57. An Air-to-Surface Ballistic Missile is a missile which when launched from an ____________ would be capable of reaching a target from distances up to ____________ of miles.

58. Intercontinental Ballistic Missiles (ICBMs) comprise the land-based leg of the U.S. __________.

59. The newest American ICBM is the MX missile which stands for

________ ____________.

60. The MX missile is planned to carry ________ nuclear warheads. Each warhead can reach a different target; the destination of each warhead can be changed by adjusting the __________ the missile is to follow.

61. The MX missile is ____________ feet long, 92 inches in __________ and weighs approximately __________ pounds.

62. The Soviet Union already has ICBMs larger than the MX; namely, the ____________.

63. In 1974, the Strategic Air Command first proposed an advanced ICBM program to replace the Minuteman missiles deployed during the ____________ and ____________ Administrations.

64. Since 1972, ____________ different basing options have been considered.

65. In 1979, President Carter announced a decision to go ahead with the MX missile and a complicated shell game method - a multiple-based __________ system of deployment.

66. In November of 1982, President Reagan announced his intention to base the MX in a configuration known as__________ ___________.

67. In theory, most of the MX missiles based on President Reagan's plan would survive because the Soviets could not time an attack so precisely as to strike all___________MX silos at the same time.

68. President_____________appointed a blue-ribbon panel headed by General ____________to review MX basing alternatives and other strategic issues.

69. To provide some measure of defense against a nuclear attack, the United States has developed various defense systems such as:

a)____,
b)____,
c)____, and
d)____.

70. In the event of the President's incapacitation,the line of authority to release nuclear weapons runs to the Vice President and then to the Secretary of_______________, not the Secretary of __________.

COMPLETION QUESTIONS

ANSWERS

1. Germans
2. foreign policy
3. II
4. Hiroshima; Nagasaki; 13,000
5. 1,000; 2,000,000
6. 1,000; 1,000,000; 2,000,000,000
7. 26,000
8. 400
9. nuclear confrontation
10. stable deterrence
11. strategic stability
12. stable deterrence
13. launch-on-warning
14. Senate Armed Services Committee
15. Cheyenne Mountain; Colorado
16. nuclear weapon
17. fission; fusion
18. fission
19. hydrogen; fusion; fission
20. hydrogen
21. warhead
22. two
23. trajectory; gravity
24. pilotless airplane; pilot
25. radar
26. warhead
27. re-entry vehicle (RV)
28. re-entry vehicle; re-enters
29. one; several
30. independently-targetable; vehicles

31. ten

32. single

33. Tactical or Battlefield Nuclear Weapons;
Intermediate-Range Nuclear Weapons;
Strategic Nuclear Weapons

34. Tactical or Battlefield Nuclear Weapons;
(TACNUCS); 100,000

35. Tactical ; Warsaw Pact

36. Theater; NATO; Warsaw Pact

37. land-based; submarine and surface; aircraft

38. the SS-20; dual

39. Pershing II; cruise missiles

40. anti-nuclear

41. Strategic

42. ICBMs; SLBMs; Heavy Bombers

43. warheads; megatonnage

44. land-based

45. cruise

CATEGORY D
ANSWERS to COMPLETION QUESTIONS - page 3

46. land and sea; nuclear

47. Intercontinental Ballistic Missiles; Submarine-Launched Ballistic Missiles; Heavy or Strategic Bombers

48. land-based

49. ICBM

50. mobile

51. SLBM; submerged; tube

52. Heavy Bomber

53. Heavy Bomber; intercontinental

54. nuclear gravity bombs;
short-range attack missiles;
air-launched cruise missiles

55. 75

56. solid

57 airplane; thousands

58. triad

59. missile experimental

60. ten; program

61. 70; diameter; 192,000

62. SS-18

63. Eisenhower; Kennedy

64. thirty-four

65. race-track

66. Dense Pack

67. 100

68. Reagan; Scowcroft

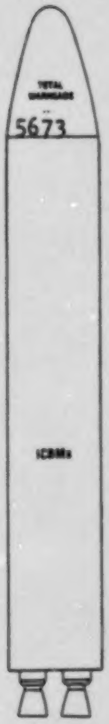
69. a) interceptor aircraft
b) surface-to-air missiles
c) anti-submarine warfare forces
d) anti-ballistic missiles

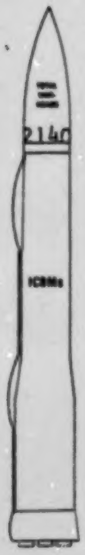
70. Defense; State

FILL-IN QUESTIONS

1. a) Identify the country associated with the total number of warheads on each InterContinental Ballistic Missile indicated below.

   b) List the names of three ICBMs for each country.


TOTAL WARHEADS
5673
ICBMs

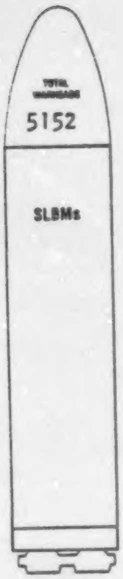


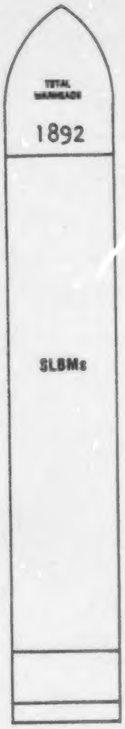
____
Country

____
Country

2. a) Identify the country associated with the total number of warheads on each Submarine-Launched Ballistic Missile indicated below.

b) List two names of SLBMs for each country.


TOTAL WARHEADS
5152
SLBMs

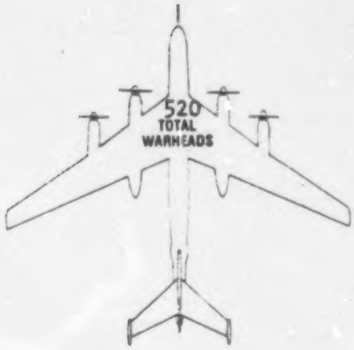

TOTAL WARHEADS
1892
SLBMs

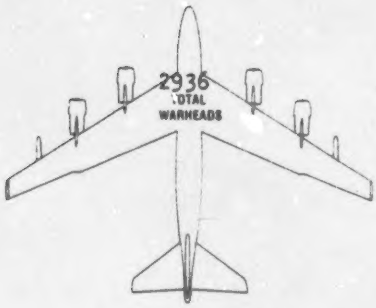
____
Country

____
Country

3. a) Identify the country associated with the total number of warheads on each Heavy or Strategic Bombers indicated below.

b) List two names of Heavy or Strategic Bombers for each country.


520
TOTAL
WARHEADS

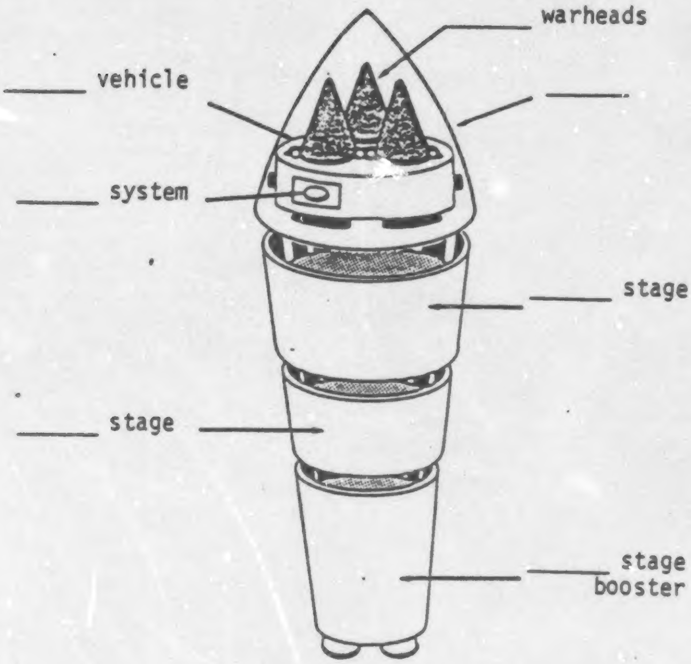

2936
TOTAL
WARHEADS

____
Country

____
Country

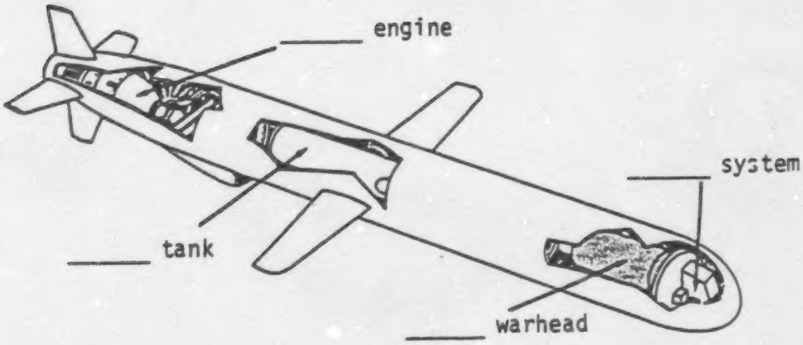
4. Place the correct letter next to the word indicated on the following diagram to complete identification of the components of a Ballistic Missile.

a) first
b) nuclear
c) shroud
d) third
e) second
f) guidance
g) postboost


warheads
_____ vehicle
_____
_____ system
_____ stage
_____ stage
_____ stage
booster

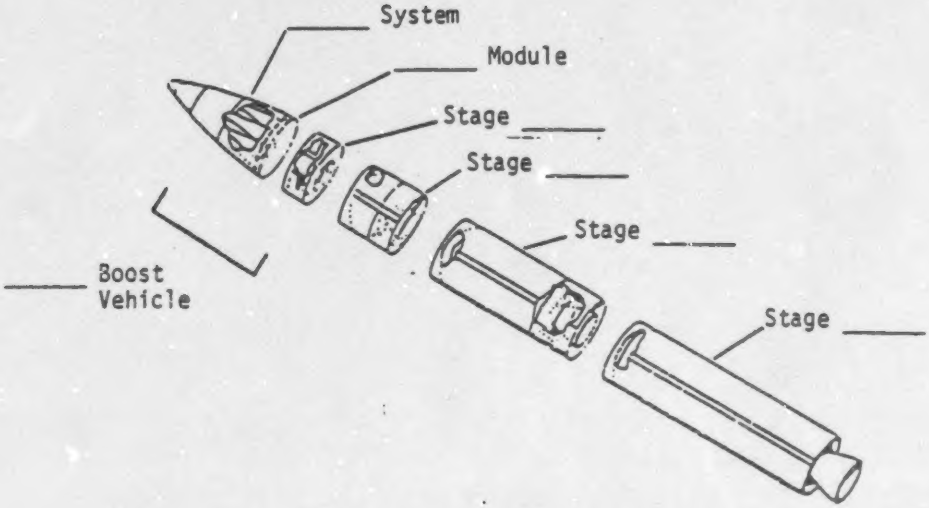
5. Place the correct letter next to the word indicated on the following diagram to complete identification of the components of a Cruise Missile.

a) nuclear
b) guidance
c) turbofan
d) fuel


______ engine
______ system
______ tank
______ warhead

6. Place the correct letter next to the word indicated on the following diagram to complete identification of the components of the MX Missile.

a) IV
b) III
c) II
d) I
e) re-entry
f) post
g) deployment


______ System
______ Module
Stage ______
Stage ______
Stage ______
Stage ______
______ Boost Vehicle

FILL-IN QUESTIONS

ANSWERS

1. Left - Soviet Union
   Right - United States

2. Left - United States
   Right - Soviet Union

3. Left - Soviet Union
   Right - United States

4. Clockwise -
   b - nuclear warheads
   c - shroud
   d - third
   a - first
   e - second
   f - guidance
   g - postboost

ANSWERS to FILL-IN QUESTIONS - page 2

5. Clockwise -

c - turbofan
b - guidance
a - nuclear
d - fuel

6. Clockwise -

e - reentry
g - deployment
a - IV
b - III
c - II
d - 1
f - post

TEACHING AIDS

Suggested teaching approaches for Section II.

1. Have students prepare biographical sketches of Henry Adams, W. Winwood Reade, Christopher Dawson, and Albert Einstein. They are quoted on page 32. The factors students should look for in their research are: the intellectual, parental, educational, and religious influences that may have prompted these quotations.

2. Secure a map of Eastern Europe (similar to pages 40-41). Have students locate the countries that have the predominant amount of missiles. Why were these specific sites selected? Did the local population resist the deployment of missiles in their area? Why?

3. It was recently disclosed that President Eisenhower had considered the dropping of atomic bombs in North Korea and Communist China as a way to end the Korean War. Discuss what factors the students believe prompted Eisenhower not to do so?

4. Richard Nixon's paperback, The Real War, 1980, Warner Books, pages 181-191, has a section called "Arms Control." Included are six indispensable conditions that he feels must be met before the United States makes any further strategic arms agreements. Have students read this section and write reports on whether they agree or disagree with his viewpoint.

5. Have students randomly interview at least five individuals on their viewpoints on any one or all of the following:

    1) a nuclear freeze
    2) the arms race
    3) the MX missile
    4) arms control
    5) a yearly summit meeting between the U.S. & U.S.S.R.

    Then, have the students give an oral presentation on their findings.

6. The World Map, pages 54-55, shows countries that 1) have nuclear weapons; 2) are interested in nuclear weapons; 3) have the capability for nuclear weapons. What forces would influence a nation's government to opt for one of these three categories?

7. Page 53 presents valuable statistical data on total of the U.S. and the Soviet Union strategic arsenals. Have the student examine the data and then prepare an analytical report such as the following:

	Number				Total Warheads				Total Megatons			
Launcher	U.S.		U.S.S.R.		U.S.		U.S.S.R.		U.S.		U.S.S.R.	
ICBMs	1040	53.8%	1398	53.3%	2140	20.9%	5673	70.2%	1329	33.3%	4442	74.4%
SLBMs	568	29.4%	962	36.7%	5152	50.3%	1892	23.4%	333	8.4%	1009	16.9%
Heavy or Strategic Bombers	326	16.8%	260	10.0%	2936	28.8%	520	6.4%	2326	58.3%	520	8.7%
Grand Total	1934	100.0%	2620	100.0%	10,228	100.0%	8085	100.0%	3988	100.0%	5971	100.0%

Answers you receive will depend a great deal on the creativity and imagination of the class and the ability to manipulate data. A student that is well-versed in the computer may be challenged to write a program to produce unique answers to this assignment.

8. Have students estimate the cost to build a cruise missile ($2.2 million in 1978 compared to $7 million in 1984). Then have them do a cost/benefit analysis as to whether the benefits far outweigh the costs.

9. Class Team Reports on the following:

   a) Which U.S. Senators are for a high-defense budget? What factors will influence a Senator as to which position he or she will take?

   b) The positions and progress being made by the negotiating teams on the START Talks and the INF Talks.

   c) How would the team restructure the United States and the Soviet Union nuclear arsenals?

10. Have students role play at being leaders to the seven-nation yearly Summit meeting with arms control and the budget deficit as the central theme.

TOPICS FOR A DEBATE

1. The MX missile: A necessary adjunct to the American nuclear system.

2. Only the President of the United States should have the final authority to release nuclear weapons.

3. The Hotline: An obsolete approach to resolve world tension.

4. The Warsaw Pact Countries: A danger to American security.

5. The Pershing II and Cruise Missile deployment in Europe: Should the United States reverse its decision?

LIBRARY RESEARCH ASSIGNMENTS

1. The students should research and report on the advanced technology of space-based weapons which are part of a new development program endorsed by the Reagan Administration.

2. Have students read the Scowcroft Commission Report and present their findings to the class with a commentary as to whether they agree or disagree with the report and the reasons why.

3. At least five articles or books on the arms control controversy should be read by the students and a report given on the similarity or divergence of opinion. Examples: George F. Will, Newsweek, June 18, 1984, page 104 and Economic Choices, 1984, Brookings.

4. Research the various groups involved in the nuclear weapons controversy such as Physicians for Social Responsibility, Institute for Defense and Disarmament Studies and Student Pugwash and have student comment on the rationalization for such organizations, their progress, and their programs.

5. Have students research the proposals for creation of a nuclear-weapons-free corridor in central Europe.

Section III

SECTION III

OVERVIEW

Section III of this book consists of twenty-one pages and provides the six important interdependent components of the arms control process:

1. The Negotiating Process
2. The SALT Talks
3. Verification and Compliance
4. Existing Treaties and Agreements
5. Ongoing Arms Control Negotiations
6. Violation Concerns of the U.S. and the U.S.S.R.

Beginning with the negotiating positions of the United States and the Soviet Union and the various participants in the Negotiating Process, this section covers the SALT Talks in detail with a concise explanation of the background leading up to the SALT I and SALT II agreements, their purpose, and their important relevant parts. The intricacies of negotiations and the approaches of the negotiating teams are the underlying theme. Positions presented by each side reflect the marked contrast in the approach of the United States with that of the Soviet Union.

The most controversial segment of arms control - the issue of Verification - is succinctly described covering the basic concepts and the politics of Verification and the diplomacy of Compliance. The vocabulary of verification - Monitoring, National Technical Means, and the Standing Consultative Commission - is well-defined.

Proposals such as the Baruch Plan of 1946 and Eisenhower's Open Skies Plan are included. Existing Treaties and Agreements between the U.S. and the U.S.S.R. and other countries, as well as on-going arms contol negotiations are covered.

Finally, violation concerns of the U.S. and the violation concerns of the U.S.S.R. are listed according to two segments of time - Prior to 1980 and After 1980.

This section provides an effective point for discussion of the economic and political differences between the United States and the Soviet Union.

ESSAY

1. a) List the names and titles of government officials who participate with the National Security Council in determining the United States' negotiating positions.

   b) What is the function of the National Security Advisor?

2. What factors led to the beginning of the SALT I Talks in 1969? The SALT II Talks in 1972?

3. Compare and contrast the contents of SALT I Agreements to those of the SALT II Treaty.

4. Why , in your opinion, has the U.S. Senate not yet ratified the SALT II Treaty?

5. What role does the Standing Consultative Commission (SCC) play in nuclear weapons and arms control.

6. Contrast the treaties that: (a) prevent spread of nuclear weapons; (b) reduce the risk of nuclear war.

7. Discuss the U.S. violation concerns after 1980. The violation concerns of the U.S.S.R. after 1980.

8. Identify the following:

   a) indow of vulnerability
   b) onitoring
   c) ellow Rain

9. Compare the contents of the Antarctic Treaty of 1959 with the 1971 Seabed Treaty.

10. What is the present legal status of (a) the 1974 Threshold Test Ban Treaty; (b) the 1976 Peaceful Nuclear Explosions Treaty?

11. What role, if any, did former Secretary of State Henry A. Kissinger play in the SALT I Treaty and Agreement?

12. Discuss some of the various approaches that have been suggested to verify compliance with arms control agreements.

13. Suggest other innovative approaches you would recommend to the National Security Council which they should consider in order to strengthen the verification process. Justify the feasibility of your approaches.

14. Why is verification of weapons control such an important aspect of nuclear arms control discussions?

15. What impact, if any, did the Russian invasion of Afghanistan have upon the ratification of the SALT II Treaty?

16. Compare the contents of the ABM Treaty and the Interim Agreement.

17. What are the three parts of the SALT II Treaty?

18. It has been stated that the SALT II Treaty is the most detailed and far-reaching agreement in the history of nuclear arms control. Comment.

19. What was the purpose of the Protocol to the SALT II Treaty?

20. What specific goals were to be discussed by the U.S. and the U.S.S.R. in the next set of rounds of SALT negotiations as a result of the SALT II Treaty?

21. Did the Russians accept President Eisenhower's proposal of an Open Skies Plan? Why or why not?

22. Has President Reagan's proposal for a futuristic defense against nuclear attack been accepted by the Soviet Union? Why or why not?

23. Why has it become more difficult to resolve SALT compliance questions after 1979? Discuss.

24. Why do the superpowers usually choose either Vienna or Geneva for their talks?

25. Although President Reagan sets forth a goal of "nuclear superiority" over the Soviet Union, can he achieve his goal? Why or why not?

26. Discuss some of the treaties that have been signed by the U.S. and the U.S.S.R. that do not deal with nuclear weapons and arms control.

27. Has there been a decline in the military superiority of the U.S. vis-a-vis the Soviet Union? If so, why?

28. Why is our information on the Soviet decision-making incomplete and uncertain?

29. How many members belong to the Soviet Politiburo? What is its function in the Russian political system?

30. What is the purpose of the SALT Talks?

TRUE or FALSE

Indicate whether the statement is True or False. If the statement is FALSE, place correct answer in space after the statement.

1. ______ Strategic Arms Limitation Talks between the United States and the Soviet Union began in 1960.__________

2. ______ The purpose of SALT Talks was to promote U.S. national security by reducing the risk of nuclear war through negotiation of mutual limits on strategic nuclear arms.________

3. ______ Under the direction of President Ford and his National Security Advisor, Henry Kissinger, the first results of the SALT process were realized in a SALT I Agreement which consisted of two parts - the ABM Treaty and the Interim Agreement. __________

4. ______ The ABM Treaty, signed by the United States and the Soviet Union, was of limited duration to be reviewed jointly every four years.__________

5. ______ The ABM Treaty prohibits development, testing, and deployment of sea-based, air-based, space-based, and mobile land-based anti-ballistic systems and their component parts.__________

6. ______ In 1977, the United States and the Soviet Union conducted a review of the ABM Treaty and both sides agreed that the Treaty had operated effectively, continued to serve the interests of both sides, and needed no amendments.__________

7. ______ The second half of the SALT I accords was the Interim Agreement on Offensive Weapons, a holding action to complement the ABM Treaty, to limit competition in offensive weapons, and to provide a framework for further negotiations. ___ ___

8. ______ The Interim Agreement counted and limited the number of warheads on launchers. ____________

9. ______ The United States began to deploy MIRVs in 1960.__________

10. ______ A ban on MIRVs, proposed by the United States, was to be linked to on-site inspection. ____________

CATEGORY B
TRUE or FALSE - page 2

11. ____ When MIRVed missiles became increasingly accurate, in theory, they placed U.S. land-based missiles at risk, the so-called window of vulnerability. ________

12. ____ A major breakthrough in SALT II talks occured in November 1974 at a meeting in Geneva between President Gerald Ford and the Soviet leader, Leonid Brezhnev.________

13. ____ The SALT II Treaty consists of four parts. ________

14. ____ The SALT II Treaty was completed and signed by President Carter and President Brezhnev in Vienna on June 18, 1979.________

15. ____ The SALT II Treaty has been ratified by the U.S. Senate.________

16. ____ The SALT II Treaty is the most detailed and far-reaching agreement in the history of nuclear arms control and is to be in effect through December 1985.________

17. ____ The Protocol to the SALT II Treaty was to remain in force through December 3, 1985.________

18. ____ The Joint Statement of Principles is not an element of the SALT II Treaty.________

19. ____ Verification means the process of determining whether there has been compliance with the provisions of arms control treaties and agreements. ________

20. ____ Monitoring - the collection of intelligence data - is the final stage in the verification process. ________

21. ____ The Baruch Plan was the first American proposal for the control of nuclear weapons accepted by the U.S. and the Soviet Union.________

22. ____ President Eisenhower proposed an Open Skies Plan which called for inspection of United States and Soviet territory by aircraft of the other side as a warning system against surprise attack.______

23. _____ The Soviet Union accepted the Open Skies Plan. __________

24. _____ Under the terms of the Antarctic Treaty of 1959, all parties, including the Soviet Union, agreed to open their installations on that continent to inspection by any of the other signatory nations. __________

25. _____ The Limited Test Ban Treaty of 1963, which relied solely on National Technical Means of verification for monitoring compliance, marked an important step in the history of arms control. __________

26. _____ In 1972, the SALT I Agreements were concluded. __________

27. _____ The Standing Consultative Commission (SCC) was established as a joint body to include the U.S., U.S.S.R. and U.K. __________

28. _____ In November 1972, the second phase of the SALT Talks, aimed at achieving a more comprehensive agreement on strategic offensive arms to replace the Interim Agreement, began and culminated with the signing of the SALT II Treaty in June 1979. __________

29. _____ The SALT II Treaty covered the systems to be limited, the means of establishing equality in strategic nuclear forces, and specific quantitative and qualitative limits. __________

30. _____ Adequate verification has been a key objective of SALT but not an essential feature of SALT II. __________

31. _____ In 1980, the Secretary of Defense, the Secretary of State, and the Joint Chiefs of Staff have all testified that compliance with the provisions of the SALT II Treaty is not adequately verifiable. __________

32. _____ It has become less difficult to resolve SALT compliance questions after 1979. __________

33. _____ The 1959 Antarctic Treaty demilitarizes the Antarctic and declares that it shall be used for peaceful purposes. __________

34. ____ The 1971 Seabed Treaty prohibits the placement of nuclear weapons or other weapons of mass destruction on the seabed beyond a 20-mile zone.________

35. ____ The 1963 Hot Line Agreement establishes a direct communications link between the United States, the U.S.S.R. and Great Britain.________

36. ____ The 1963 Limited Test Ban Treaty bans nuclear weapon tests only in the atmosphere.________

37. ____ The 1972 ABM (SALT I) prohibits research and development of anti-ballisti missile defenses by the United States and the Soviet Union.________

38. ____ The 1972 Biological Weapons Convention bans the development, production, and stockpiling of biological and toxin weapons but does not require the destruction of stockpiles.________

39. ____ The Intermediate Nuclear Forces (INF) Talks are between the United States and the Soviet Union on limiting intermediate-range missiles in the United States and the Soviet Union.________

40. ____ Questions have been raised about possible Soviet development of a mobile ABM system.________

41. ____ When being tested, a missile transmits radio signals to ground monitoring stations so that its performance can be assessed.________

42. ____ In 1974, the United States, United Kingdom and Soviet Union signed the Threshold Test Ban Treaty which prohibits testing nuclear devices underground with an explosive power (yield) of greater than 150 kilotons. ________

43. ____ Beginning in 1974, the United States used prefabricated shelters of about 2700 square feet over Minuteman silos to provide environmental protection during modernization and silo-hardening work.________

44. ____ In 1973, the United States began construction of two new phased-array radar on Shemya Island Alaska. ________

45. ____ In 1966, the United States was obliged to deactivate 177 launchers for Atlas and Titan I ICBM systems according to Standing Consultative Commission protocol.________

TRUE OR FALSE

ANSWERS

Question Number	Correct Answer
1. False	1969
2. True	---
3. False	President Richard Nixon
4. False	unlimited; five years
5. True	---
6. True	---
7. True	---
8. False	the number of launchers (not warheads)
9. False	1970
10. True	---
11. True	---
12. False	Vladivostok
13. False	Three
14. True	---
15. False	has not
16. True	---
17. False	December 31, 1981
18. False	is an element
19. True	---
20. False	initial stage

CATEGORY B
ANSWERS to TRUE or FALSE - page 2

SECTION III

Question Number	Correct Answer
21. False	rejected
22. True	---
23. False	rejected
24. True	---
25. True	---
26. True	---
27. False	U.S. and U.S.SR. only
28. True	---
29. True	---
30. False	is an essential feature
31. False	is adequately verifiable
32. False	has become more difficult
33. True	--
34. False	12 mile zone
35. False	the U.S. and the Soviet Union only
36. False	as well as under water and outer space
37. False	permits research & development to a limited degree
38. False	does require the destruction of stockpiles
39. False	in Europe
40. True	---
41. True	---
42. False	only the United States and the Soviet Union
43. True	---
44. False	one
45. True	---

MULTIPLE CHOICE

1. The Strategic Arms Limitation Talks between the United States and the Soviet Union were conducted during the administrations of:

   a) Ford, Carter, Reagan
   b) Nixon, Ford, Carter
   c) Kennedy, Nixon, Ford
   d) Kennedy, Johnson, Nixon

2. The SALT I Agreement consists of:

   a) the ABM Treaty and the Interim Agreement
   b) the ABM Treaty and the Protocol
   c) only the ABM Treaty
   d) only the Interim Agreement

3. The ABM Treaty was of:

   a) limited duration to be reviewed every five years
   b) unlimited duration to be reviewed every five years
   c) limited durationand to be reviewed every four years
   d) none of the above

4. The Interim Agreement:

   a) froze the number of launchers of defensive weapons
   b) froze the number of launchers of offensive weapons
   c) froze the number of all nuclear weapons
   d) none of the above

5. The SALT I Talks began in:

   a) 1972
   b) 1969
   c) 1974
   d) 1971

6. The SALT II Treaty was signed in the year:

   a) 1979
   b) 1969
   c) 1978
   d) 1970

7. Early discussions between the U.S. and the U.S.S.R. on a SALT II Treaty covered such issues as:

   a) establishing equality in strategic nuclear forces and specific quantitative limits
   b) establishing equality in strategic nuclear forces and specific quantitative and qualitative limits
   c) establishing equality in strategic weapons and specific qualitative limits
   d) none of the above

8. The SALT II Agreement consists of:

   a) a Treaty and Protocol
   b) a Treaty, Protocol and Joint Statement of Principles
   c) a Protocol and a Joint Statement of Principles
   d) none of the above

9. The SALT II Treaty was completed and signed by:

   a) President Carter and Premier Brezhnev
   b) President Ford and Premier Brezhnev
   c) President Nixon and Premier Khruschev
   d) President Reagan and Premier Chernenko

10. The SALT II Treaty provided for:

   a) a limit of 2250 strategic nuclear delivery vehicles
   b) a ban on construction of additional fixed ICBM launchers
   c) a ban on flight-testing or deployment of new types of ICBMs; except for one new land-based missile with a limit of ten warheads
   d) all of the above

11. Monitoring, which includes the collection of intelligence data, is

    a) the initial stage in the verification process
    b) the final stage in the verification process
    c) purpose of the Baruch Plan
    d) none of the above

12. The Limited Test Ban Treaty of 1963, was an important step in the history of arms control since

    a) it banned nuclear testing in the atmosphere
    b) it banned nuclear testing in outer space
    c) it banned nuclear testing under water
    d) all of the above

13. The SALT II Treaty was to replace:

    a) the ABM Treaty of SALT I
    b) the Interim Agreement of SALT I
    c) both the ABM Treaty and the Interim Agreement
    d) none of the above

14. SALT II compliance questions were aggravated by the

    a) U.S. failure to ratify the SALT II Treaty
    b) U.S.S.R. failure to ratify the SALT II Treaty
    c) NATO's failure to accept the Treaty
    d) none of the above

15. The 1974 Threshold Test Ban Treaty limits the yield of underground testing by the U.S. and the Soviet Union of

    a) nuclear weapon tests of 150 kilotons
    b) only ICBM tests to 150 kilotons
    c) only SLBM tests to 150 kilotons
    d) none of the above

16. The 1968 NonProliferation Treaty:

a) prohibits the transfer of nuclear weapons by nuclear weapons states
b) allows the transfer of nuclear weapons by nuclear weapons states
c) prohibits the testing, use, manufacture, and production of nuclear weapons
d) none of the above

17. The Open Skies Plan was proposed by:

a) President Truman
b) President Eisenhower
c) President Kennedy
d) President Nixon

18. The Standing Consultative Commission, a joint U.S./U.S.S.R. body, meets at least twice annually in

a) Moscow
b) Vienna
c) Geneva
d) none of the above

19. The following treaties have not been ratified by the Senate:

a) NonProliferation Treaty; Seabed Treaty
b) Outer Space Treaty; Antarctic Treaty
c) Peaceful Nuclear Explosions Treaty; Threshold Test Ban Treaty
d) all of the above

20. Encoding missile-test telemetry

a) is a violation under the terms of the Interim Agreement
b) is not a violation under the terms of the Interim Agreement
c) is a violation of the ABM Treaty
d) none of the above

MULTIPLE CHOICE

ANSWERS

Question Number	Correct Answer
1.	b - (Nixon, Ford, Carter)
2.	a - (The ABM Treaty and the Interim Agreement)
3.	b - (unlimited duration to be reviewed every five years)
4.	b - (froze the number of launchers of offensive weapons)
5.	b - (1969)
6.	a - (1979)
7.	b - (establishing equality in strategic nuclear forces and specific quantitative and qualitative limits)
8.	b - (a Treaty, Protocol and Joint Statement of Principles
9.	a - (President Carter and Premier Brezhnev)
10.	d - (all of the above)
11.	a - (the initial stage in the verification process)
12.	d - (all of the above)
13.	b - (the Interim Agreement)
14.	a - (U.S. failure to ratify the SALT II Treaty)
15.	a - (nuclear weapon tests of 150 kilotons)
16.	a - (prohibits the transfer of nuclear weapons by nuclear weapons states)
17.	b - (President Eisenhower)
18.	c - (Geneva)
19.	c - (Peaceful Nuclear Explosions Treaty and Threshold Test Ban Treaty)
20.	a - (is a violation under the terms of the Interim Agreement)

COMPLETION QUESTIONS

1. Strategic Arms Limitation Talks between the United States and the Soviet Union began in 1969 and were conducted under the acronym____________, during the administrations of three American presidents: ___________, ____________, and ____________.

2. Under the direction of President________ and National Security Advisor, _________ _________, the first results of the SALT process were realized in a SALT I Agreement which consisted of two parts - the_______ ________ and the _________ _________ - both concluded in ________.

3. The ABM Treaty was of _______duration with joint U.S. and Soviet reviews every _______ years.

4. Some research and development for new anti-ballistic missiles is permitted by the ABM Treaty, but on a very _________ scale.

5. In ______, the United States and the Soviet Union conducted a review of the _______ ________ and both sides agreed that the treaty had operated effectively, continued to serve the interests of both sides, and needed no amendments.

6. The second half of the SALT I accords was the ________Agreement on _________ weapons.

7. The ________ __________ counted and limited only the________ of strategic weapons, not the number of ________ on them.

8. The United States began to deploy MIRVs in ________; the Soviet Union began to deploy MIRVs in _________.

9. One of the negotiating options under review by the United States Government in late 1969 and 1970 was a ban on __________ testing and how that ban could be ___________.

10. The United States proposed that a ban on _______ be linked to ________ _________.

11. When Soviet land-based missiles became increasingly accurate, in theory, they placed U.S. land-based missiles at risk - the so-called ___________ of __________.

12. Of______ years duration, the Interim Agreement entered into force on ________ and expired on __________.

13. A major breakthrough in the SALT II talks occurred in November 1974 at the __________meeting between President ______ and the Soviet leader, __________.

14. The SALT II Agreement consists of (1) a________that would incorporate and reduce the limits of the ______________accord and would be in force through _________; (2) a_________that would prohibit through __________ the deployment of weapons about which both sides had the greatest difficulty in agreeing - ground and sea-launched cruise missiles and mobile ICBMs; and (3) a Joint ________ of __________, an agreed set of guidelines for further negotiations.

15. The SALT II Treaty was completed and signed by President Carter and President Brezhnev in __________ in June ________.

16. The SALT II Treaty has_________been ratified by the ________.

17. The SALT II Treaty provided a limit of __________ (down from 2400 at ___________) in the total number of strategic nuclear delivery vehicles; namely, _____________ ballistic missiles, ____________-__________ ballistic missiles, and ________ ____________ including those carrying long-range _________ missiles.

18. The SALT II Treaty provides for a ban on flight testing or deployment of new types of ICBMs; except for one new land-based missile with a limit of _________warheads.

19. _________ is the process of determining whether there has been compliance with the provisions of arms control treaties and agreements.

20. _________ , the collection of intelligence data, is the _________ stage in the verification process.

21. In 1946, the ______ __________ was the first American proposal for the control of nuclear weapons presented to the United Nations.

22. By 1955, the United States and the Soviet Union had come to acknowledge that any accounting of nuclear weapons and materials already produced would be extremely difficult to________.

23. At a conference in Geneva in 1955, President Eisenhower proposed an _______ __________ _Plan which called for inspection of United States and Soviet territory by _________ of the other side as a warning system against surprise attack.

24. With the 18-nation __________ ___________ of 1959, all parties, including the Soviet Union, agreed to open their installations on that continent to inspection by any of the other signatory nations.

25. In September, 1961, the United States and _________ _____________ proposed a ban on atmospheric nuclear tests that would be monitored solely by "existing means of detection."

26. The Limited Test Ban Treaty of 1963, which relied solely on ________ _____________ _________ of verification for monitoring compliance, marked an important step in the history of arms control.

27. ________ _____________ has been a key objective of SALT and is an essential feature of SALT II.

28. In 1980, the Secretary of__________, the Secretary of__________, and the _____________ of the Joint Chiefs of Staff all testified that compliance with the provisions of the _____________ Treaty is adequately ____________

29. SALT II compliance questions were aggravated by the U.S. failure to __________the SALT II Treaty.

30. ABM compliance issues were complicated by President __________'s endorsement of a ___________.defense against nuclear attack.

31. The ________ ________ Commission was established as a joint U.S./U.S.S.R. body responsible for considering questions of compliance with obligations assumed by the parties of the treaties.

32. There was disturbing evidence that the ______ ________ was engaged in ________ and __________ warfare activities, despite treaty obligations to the contrary.

33. The alleged use of _______ ________ in _________ and Southeast Asia as well as an outbreak of ________ in a Soviet city in which a military compound suspected of biological warfare activities was located has cast a pall on ongoing arms control negotiations of every kind.

34. The 1967 ___________ Space Treaty prohibits placing nuclear or other weapons of mass destruction in ________ __________.

35. The 1968 Non-Proliferation Treaty prohibits the ________ of nuclear weapons by nuclear weapon states and the acquisition of such weapons by adhering _______-________-weapon states.

36. The 1971 Seabed Treaty prohibits the placement of nuclear weapons or other weapons of mass destruction on the _____ beyond a _______-mile zone.

37. The 1963 ______ ________ ________ established a direct communications link between the United States and the Soviet Union for use in time of emergency.

38. The 1971 Nuclear Accidents Agreement provides for immediate notification by the United States and the Soviet Union of an _________unauthorized incident, or a possible detonation of a nuclear weapon.

39. The 1974 Threshold Test Ban Treaty limits the yield of underground U.S. and Soviet nuclear weapons tests to _________ kilotons

40. The 1976 Peaceful Nuclear Explosions Treaty complements the ________ ______ ________ ________ by prohibiting any individual _________ nuclear explosion for peaceful purposes which has a yield of more than _______ kilotons, or any group explosion with a total yield greater than ________ kilotons.

41. The 1972 Biological Weapons Convention bans the ____________, production, and _____________ of biological and toxin weapons and requires the destruction of stockpiles.

42. The 1977 Enviornmental Modification Convention prohibits the hostile use of techniques which could produce substantial __________ ___________.

43. The Conference of the Committee on Disarmament (CCD) is the central forum dealing with ____________ arms control to discuss general and complete disarmament.

44. The ________ ____________ _____________ talks between the United States and the Soviet Union discuss limiting intermediate-range missiles in ____________.

45. The negotiating positions of the United States on the subject of limiting and reducing nuclear weapons are discussed and adopted by the ________ ___________ ________; and positions of the Soviet Union are believe to be determined by the twenty member ___________.

COMPLETION QUESTIONS

ANSWERS

1. SALT; Nixon, Ford, and Carter
2. Nixon; Henry Kissinger; the ABM Treaty and the Interim Agreement; 1972
3. unlimited; five
4. limited
5. 1977; ABM Treaty
6. Interim; offensive
7. Interim Agreement; launchers; warheads
8. 1970; 1975
9. MIRV; verified
10. MIRVs; on-site inspection
11. window of vulnerability
12. five; 1972; 1977
13. Vladivostok; Ford; Brezhnev
14. Treaty; Vladivostok; 1985; (2) Protocol; 1981; (3) Statement of Principles
15. Vienna; 1979

16. not; U.S. Senate

17. 2250; Vladivostok; intercontinental; sea-launched; heavy bombers; cruise

18. ten

19. Verification

20. Monitoring; initial

21. Baruch Plan

22. verify

23. Open Skies Plan; aircraft

24. Antarctic Treaty

25. Great Britain

26. National Technical Means

27. adequate verification

28. Defense; State; Chairman; SALT II; verifiable

29. ratify

30. Reagan's; futuristic

31. Standing Consultative

32. Soviet Union; chemical and biological

33. yellow rain; Afghanistan; anthrax;

34. Outer ; outer space

35. transfer; non-nuclear

36. seabed; 12 mile

37. Hot Line Agreement

38. accidental

39. 150 kilotons

40. Threshold Test Ban Treaty, underground; 150; 1500

41. development; stockpiling

42. environmental modifications

43. multilateral

44. Intermediate Nuclear Forces (INF); Europe

45. National Security Council; Politburo

TEACHING AIDS

Teaching approaches to consider for this section.

1. Role playing as members of a Negotiating Team

   Separate the class into negotiating teams of eight to ten students. Before entering the negotiating sessions, each team should meet privately to devise the strategy and tactics they will utilize. Have each team prepare a detailed agenda to keep the talks flowing in an orderly manner. One or more negotiating sessions will show the class that the negotiating process can be very long, tedious, and very involved.

2. Suggested topics that could be assigned:

   a) What percent of U.S. troops in NATO should be reduced if budgetary restraints call for such a move?

   b) What should be considered an "optimal reduction" in the number of warheads by the U.S. and the Soviet Union?

   c) How often should summit meetings take place? What specific areas of arms control should be covered?

3. The teams may be graded according to:

   - team effort
   - manner of presentation
   - seriousness of presentation
   - confidence in presentation

4. For further motivation, each team should rate the members of their own negotiating team as to:

   - attitude in the working sessions
   - cooperation and input at the meetings
   - responsibility and accountability in accomplishing their assigned share of of the workload.

5. Selection of spokesperson for each team.

When several students vie for the position of representing the team at formal negotiating sessions, the class will have an opportunity to witness a "power struggle" which can lead to an interesting group dynamics exercise.

This is also an opportunity for the instructor to convey to the class that its counterpart is labor-management bargaining relations. You may also wish to discuss the role of the mediator in the collective bargaining process when an impasse or deadlock occurs in the negotiating process.

The negotiating process can also be extended to other areas:

a) selection of a Vice-President candidate (every four years)

b) the range of military spending to be approved by the House and Senate

c) amount of federal dollar tax increase to take effect in 1985-1989

d) celebrating the birthday of Dr. Martin Luther King, Jr. as a legal holiday

e) prayers in the school classrooms

6. Judging the negotiating process:

a) Ask the class what they perceive to be the "ideal" qualities for a negotiator?

b) Discuss how the President of the United States selects his representatives for arms control negotiations.

(At this writing, Paul Nitze is the U.S. negotiator. Read Nitze's approach in Time Magazine, January 31, 1984, page 22 Also relevant to this discussion, see Time Magazine, December 5, 1983 Cover Story: "A Soviet Walkout.")

c) Does the change of a negotiator have any impact on the arms control negotiations?

d) What are the reasons for such a long gap in time between the treaty signing by the President of the United States and its ratification by the U.S. Senate?

(On June 20, 1984, the Senate asked President Reagan to submit to them the 1974 Threshold Agreement Treaty and the Peaceful Explosion Treaty which have not yet been ratified)

e) Discuss how external forces, such as the Russian invasion of Afghanistan, can affect arms control talks and the U.S. political process.

7. Areas for class discussion:

a) Why should the student be concerned with the SALT I and SALT II talks?

b) Why the bitter controversy in the House and Senate over the number of MX missiles to be funded?

c) Distinguish between a treaty and an agreement; a protocol; a conference; a standard of principle.

d) The Roman Catholic Bishops,speaking for the U.S. Catholic Conference, testified on June 26, 1984 before the House Committee on Foreign Affairs and urged President Reagan to begin a "new effort of political will and creative diplomacy "to resume arms control negotiations with the Soviet Union." (see New York Times, June 27, 1984, page A10).

1. What is meant by "political will?"
2. What is meant by "creative diplomacy?"

TOPICS FOR A DEBATE

1. SALT III Treaty: A Necessity

2. Red China recently passed nuclear weapons information to Pakistan: A change in U.S. policy towards the People's Republic of China is required.

3. Star Wars: Anti-ballistic Defense Systems: A Necessity

4. Arms Verification: A Necessity.

LIBRARY RESEARCH ASSIGNMENTS

1. To better understand the difference between Capitalism and Communism, have students prepare biographical sketches of the following:

Capitalism	Communism
Adam Smith	Karl Marx
John Maynard Keynes	Frederick Engels
John Kenneth Galbraith	Vladimir Lenin

2. For background reading, you may wish to look at the following:

Political Differences between the U.S. and the Soviet Union

Michael Roskin, Countries and Concepts, 1982
Prentice-Hall, Chapter 1, Chapters 17-21
(Note Chapter 20 "Patterns of Interaction")

Economics of Capitalism and Communism

Paul Samuelson, Economics, 1980-11th Edition
McGraw-Hill, Chapters 42 and 43

Biographical sketches and contributions

On Adam Smith; Karl Marx; John Maynard Keynes - see
Robert Heilbroner, The Worldly Philosophers, 1980-5th Edition
Simon and Schuster

On John Kenneth Galbraith - see
Leonard Silk, The Economists 1976
Basic Books, Chapter 3

3. Have students read those sections of the following books that deal specifically with the SALT I and SALT II Treaties:

Richard Nixon, The Memoirs of Richard Nixon, Volume 2. 1978, Warner Books
Jimmy Carter, Keeping Faith: Memories of a President, 1982. Bantam Books
Zbigniew Brzezinski, Power and Principle: Memoirs of the National Security Advisor, 1977-1981. 1983, Farrar, Strauss

4. Students should prepare book reviews on any one of the following:

1.	Richard Nixon	The Real Peace	1983
	Richard Nixon	The Real War	1980
2.	Jonathan Schell	The Abolition	1984
	Jonathan Schell	The Fate of the Earth	1982

5. Select an article relevant to SALT I and SALT II from any issue of the journal, International Security, and prepare a class report.

Section IV

OVERVIEW

Section IV of this book consists of fifteen pages covering the Effects of Nuclear Weapons and Civil Defense and concludes with a list of Arms Control Terms and most commonly used Acronyms.

The basic facts on the devastating and destructive effects of nuclear weapons are informative but not emotional. Described clearly and concisely are the energies released by a nuclear explosion; namely:

explosive blast
direct nuclear radiation
thermal radiation
electromagnetic pulse (EMP)
radioactive fallout

The TTAPS Report (Nuclear Winter)- a study endorsed by over 100 scientists and biologists including scientists from the Soviet Union - is briefly outlined.

The Civil Defense chapter covers the U.S. Government's efforts, under the Federal Emergency Management Agency, to implement civil defense measures such as:

civil protection
direction and control
attack warning
emergency public information
radiological defense
citizen training
industrial protection
continuity of government

An effective introduction to this section would be to read to the class the forceful and cogent quotations by Gerard C. Smith, SALT I negotiator during the Nixon Administration and by Paul C. Warnke, SALT II negotiator during the Carter Administration.

In conclusion, this section is the culmination of the prior sections of this book. The forceful impact of the effects of nuclear weapons should, at least, influence students to better understand and absorb the importance of this issue so vital to the survival of mankind.

ESSAY

EFFECTS OF NUCLEAR WAR

1. Describe the five energies released by a nuclear explosion.
2. Compare direct "nuclear radiation" to direct "thermal radiation."
3. Why does the explosive blast of a nuclear weapon for the most part kill the population by "indirect" and not "direct" means?
4. Compare two types of mass fires that can result from a nuclear explosion.
5. Define radioactive particles. What areas are considered "hot spots?"
6. What is an electromagnetic pulse? Is it a physical threat to humans? Why or why not?
7. Discuss the contents of the 1983 TTAPS Report on the global atmospheric and climatic effects that would be caused by a nuclear war.
8. What is meant by "Nuclear Winter?"
9. When is the fallout,produced by a nuclear explosion,much greater in impact?
10. Write a thoughtful and meaningful essay on the Effects of Nuclear War.

CIVIL DEFENSE

1. What are the goals of civil defense?
2. Explain the role of the Federal Emergency Management Agency (FEMA) in civil defense.
3. How do blast shelters differ from fallout shelters?
4. What role do Emergency Operating Centers (EOCs) play in the case of nuclear attack?
5. Discuss the procedure whereby citizens would receive information of an impending nuclear attack.

6. What is "crisis relocation?" What is considered a "high risk area?"

7. Describe the role of Radiological Defense Officers in case of local nuclear war damage.

8. Comment on the different activities available for citizen training in civil defense.

9. Is it possible to protect every type of industry in case of nuclear attack? If not, which industries would be difficult to protect?

10. Discuss the "Continuity of Government" program that would be used before, during, and after a nuclear war.

11. What are Federal Relocation Centers? Discuss their function.

12. Can the coverage of the National Warning System be improved? How?

13. Write a thoughtful and meaningful essay on Civil Defense in the United States.

ARMS CONTROL TERMS AND ACRONYMS

1. List,and then define ten key arms control terms.

2. What is an acronym? Why are they used?

TRUE or FALSE

Indicate whether the statement is True or False. If the statement is FALSE, place correct answer in space after the statement.

1. _____ The energy of a nuclear explosion is released in a single form.__________

2. _____ Most direct thermal radiation takes the form of invisible light.__________

3. _____ Nuclear weapons inflict ionizing radiation on people, animals, and plants by direct radiation and fallout radiation.________

4. _____ The range of intense direct radiation from large nuclear weapons is more than the range of lethal blast and thermal radiation effects.__________

5. _____ Approximately 65 percent of the energy from a nuclear explosion is an intense burst of thermal radiation.________

6. _____ A one megaton explosion could cause flashblindness at distances as great as 13 miles on a clear day, or 53 miles on a clear night.__________

7. _____ A one megaton explosion can cause 1st degree burns at distances of about 7 miles.__________

8. _____ A one megaton explosion can cause 3rd degree burns at distances of up to 15 miles.__________

9. _____ The United States has enough facilities to treat all cases with severe burns.

10. _____ A firestorm involves violent inrushing winds that create extremely high temperatures but prevents the fire from spreading radially outward.__________

11. _____ Electromagnetic pulse is an electromagnetic wave similar to radio waves which results from secondary reactions occurring when the nuclear gamma radiation is absorbed in the air or ground.__________

12. _____ There is evidence that EMP is not a physical threat to humans._________

CATEGORY B
TRUE or FALSE - page 2

13. _____ While any nuclear explosion in the atmosphere produces some fallout, the fallout is far less if the burst is on the surface, or at least low enough for the fireball to touch the ground.__________

14. _____ "Rainfall" can have a significant influence on the ways in which radiation from smaller weapons is deposited since rain will carry contaminated particles to the ground.__________

15. _____ The areas that receive contaminated rainfall would become "hot spots" with greater radiation intensity than their surroundings.__________

16. _____ Some radioactive particles will be thrust into the stratosphere and may not return to earth for some years.__________

17. _____ Some fallout from U.S. and Soviet weapons tests in the 1950's and early 1960's can still be detected.__________

18. _____ The four known principal consequences that would occur after a nuclear war are: 1) obscuring smoke in the troposphere; 2) obscuring dust in the stratosphere; 3) fallout of radioactive debris; 4) partial destruction of the ozone layer.__________

19. _____ Carl Sagan, the renowned scientist, predicts a Nuclear Winter where temperatures would drop so catastrophically that virtually all crops and farm animals would be destroyed.__________

20. _____ Attack warning will be passed over the National Warning System to federal, state, and local warning points which operate 12 hours a day.__________

21. _____ To assist officials of the Emergency Operating Centers in reporting local nuclear war damage to federal authorities, FEMA will provide specially trained radiation experts called Radiological Defense Officers. __________

22. _____ Efforts to preserve critical economic assets and thereby accelerate postattack recovery include industrial defense measures to make buildings or machinery more resistant to blast pressure, fire, and debris.__________

23. _____ FEMA's Federal Preparedness Program is designed primarily to protect the leadership and essential functions of the Executive Branch before, during and after a nuclear war.__________

24. _____ Federal Relocation Centers are fallout-protected, self-supporting facilities supplied with state-of-the-art computer and communication systems to perform a variety of mobilization functions.__________

25. _____ Approximately 400 relocation centers are scattered throughout ten states in a 350-mile radius around Washington, D.C. known as the Federal Relocation Arc.__________

26. _____ Most of the relocation centers are connected by satellite, microwave and high-frequency radio communications, as well as underground cables,to transmit and receive information.__________

27. _____ Binary nerve gas is toxic gas created by the mixture of four relatively harmless chemicals during the final trajectory stage of a missile, bomb, or shell in which the gases are loaded.__________

28. _____ "Local fallout" falls to the Earth's surface within twenty-four hours of the blast.__________

29. _____ A reprocessing plant separates the uranium and plutonium present in spent reactor fuel. __________

30. _____ Telemetry is the transmission of electronic signals by missiles to Earth.__________

TRUE or FALSE

ANSWERS

Question Number	Correct Answer
1. False	many different ways
2. False	visible light
3. True	---
4. False	is less
5. False	35 percent
6. True	---
7. True	---
8. False	5 miles
9. False	facilities to treat only 1000 to 2000 cases
10. True	---
11. True	---
12. False	is a physical threat
13. False	is far greater
14. True	---
15. True	---
16. True	---
17. True	---
18. True	---
19. True	---
20. False	24 hours a day

CATEGORY B
ANSWERS to TRUE OR FALSE - page 2

Question Number	Correct Answer
21. True	---
22. True	---
23. True	---
24. True	---
25. False	100 relocation centers throughout 5 states
26. True	---
27. False	two relatively harmless chemicals
28. True	---
29. True	---
30. True	---

MULTIPLE CHOICE

1. The statement "An unlimited arms race - one without rules - might be so dangerous as to lead to the outbreak of a war which would have no victors," is associated with:

   a) Richard Nixon
   b) Paul C. Warnke
   c) Ronald Reagan
   d) Gerard C. Smith

2. The energy of a nuclear explosion can be released by

   a) an explosive blast
   b) direct nuclear radiation
   c) electromagnetic pulse
   d) all of the above

3. Most immediate damage to cities comes from

   a) radioactive fallout
   b) thermal radiation
   c) explosive blast
   d) none of the above

4. Mass fires can be of two types

   a) a firestorm and thermal radiation
   b) a firestorm and a conflagration
   c) an electromagnetic pulse and a conflagration
   d) none of the above

5. The 1983 TTAPS report on the global atmospheric and climatic effects that would be caused by a nuclear war are

   a) obscuring smoke in the troposphere
   b) obscuring dust in the stratosphere
   c) fallout of radioactive debris
   d) all of the above

6. Carl Sagan, the renowned scientist predicts

   a) land temperatures would drop to 13 degrees below zero
   b) a nuclear winter that would destroy all crops and farm animals
   c) photosynthesis and all plant growth would by impossible
   d) all of the above

7. Civil Defense seeks to protect the population, protect industry and

   a) destroy the quality of post-attack life, institutions and values
   b) maintain the quality of post-attack life, institutions and values
   c) improve the quality of post-attack life institutions and values
   d) none of the above

8. The thrust of the Federal Emergency Management Agency (FEMA) is to protect the U.S. population during an acute crisis by

   a) relocating people from the rural cities to urban cities
   b) relocating people from cities over a period of several days and provide them with fallout protection and support
   c) provide people in larger cities with fallout protection and support
   d) none of the above

9. "Crisis location" calls for the evacuation of

   a) 150 million Americans from about 400 high risk areas
   b) 250 million Americans from about 500 high risk areas
   c) 150 million Americans from about 5000 high risk areas
   d) none of the above

10. Blast shelters are

   a) buried or semi-buried structures
   b) designed to offer substantial protection against direct nuclear effects
   c) designed to offer substantial protection against indirect nuclear effects
   d) none of the above

11. Civil Defense includes

    a) civil protection and radiological defense
    b) attack warning and emergency public information
    c) citizen training and continuity of government
    d) all of the above

12. Attack warnings will be passed over the National Warning System to over

    a) 1200 federal and state warning points that operate 12 hours a day
    b) 1200 federal, state and local warning points that operate as needed
    c) 1200 federal, state and local warning points that operate 24 hours a day
    d) none of the above

13. Approximately 100 relocation centers are scattered throughout

    a) 10 states in a 350-mile radius around Washington DC
    b) 15 states in a 400-mile radius around Washington DC
    c) 5 states in a 350-mile radius around Washington DC
    d) none of the above

14. To permit broadcast of emergency information, radio stations have been provided with

    a) fallout protection
    b) emergency power generators
    c) remote units
    d) all of the above

15. Radiological instruments are designed to

    a) monitor accumulated radiation doses in and outside of shelters
    b) monitor radiation levels in and outside of shelters
    c) monitor decay rates in and outside of shelters
    d) all of the above

MULTIPLE CHOICE

ANSWERS

Question Number	Correct Answer
1.	b - Paul C. Warnke
2.	d - all of the above
3.	c - explosive blast
4.	b - a firestorm and a conflagration
5.	d - all of the above
6.	d - all of the above
7.	c - improve the quality
8.	b - relocating people from cities over a period of several days an provide them with fallout protection and support
9.	a - 150 million Americans from about 400 high risk areas
10.	b - designed to offer substantial protection against direct nuclear effect
11.	d - all of the above
12.	c - 1200 federal, state and local warning points operating 24 hours a day
13.	a - 10 states in a 350-mile radius
14.	d - all of the above
15.	d - all of the above

COMPLETION QUESTIONS

1. The energies of a nuclear explosion can be released by __________ radiation, thermal __________, fires, electomagnetic __________ and __________ fallout.

2. Civil defense includes civil ________, direction and ________, attack _________, emergency ___________ information, radiological _________, citizen training, ____________ protection and continuity of ____________.

3. ___________ radiation takes the form of visible light.

4. The creation of a variety of radioactive particles which are thrown up into the air by the force of the blast are called ___________ when they return to Earth.

5. Most immediate damage to cities from large weapons comes from the _________ ___________.

6. For the most part, blast kills people by _________ means.

7. Nuclear weapons inflict ionizing radiation on people, animals, and plants in two different ways: _________ radiation and __________ radiation.

8. ________ radiation is received from particles that are made radioactive by the effects of the explosion and subsequently distributed at varying distances from the site of the blast.

9. For large nuclear weapons, the range of intense ________ radiation is less than the range of lethal _________ and thermal radiation effects.

10. The effects of thermal radiation are roughly comparable to the effect of a ________ ________ flash from an enormous sunlamp.

CATEGORY D
COMPLETION QUESTIONS - page 2

11. Thermal radiation travels at the speed of ________.

12. A one megaton explosion could cause flashblindness at distances as great as ________ miles on a clear night.

13. A one megaton explosion can cause 1st degree burns at distances of about ________ miles; 2nd degree burns at distances of about ________ miles, producing blisters that lead to infection if untreated and permanent ________; and 3rd degree burns at distances of up to ________ miles, destroying ________ tissue.

14. The entire United States has facilities to treat ________ to ________ severe burn cases.

15. A single nuclear weapon could produce more than ________ severe burn cases.

16. ________ damage to stoves, water heaters, furnaces, electrical circuits, or gas lines would ignite fires where fuel is plentiful.

17. Mass fires could be of two kinds: a ________ and a ________.

18. Electromagnetic pulse is an ________ ________ similar to radio waves which results from secondary reactions occurring when the nuclear ________ radiation is absorbed in the air or ground.

19. There is no evidence that ________ is a physical threat to humans.

20. Rainfall can have a significant influence on the ways in which ________ from smaller weapons is deposited since rain will carry contaminated particles to the ground. The areas receiving such contaminated rainfall would become ________ with greater radiation intensity than their surroundings.

21. The __________ effects of fallout radiation are substantially the same as those from direct radiation.

22. The ________ Report is a study on the global __________ and climatic effects that would be caused by a nuclear war. [illegible] study has been endorsed by over ________ scientists and biologists including scientists from the Soviet Union.

23. The four known principal consequences that would occur after a nuclear war are: obscuring smoke in the ________; obscuring ________ in the stratosphere; fallout of _________ debris; and partial destruction of the ________ layer which shields and protects the Earth from the deadly ultra-violet radiation of the Sun.

24. ________ ________, the reknowned scientist, predicts a Nuclear Winter where temperatures would drop so catastrophically that virtually all crops and farm animals would be destroyed as would most varieties of uncultivated or undomesticated food supplies.

25. Some observers argue that U.S. civil defense promotes _________ by increasing the credibility of U.S. retaliation and by reducing any Soviet destructive advantage in a nuclear war.

26. The Federal Emergency Management Agency (FEMA) incorporates all previous responsibilities given to the _________ Civil Preparedness Agency, the Federal _________ Agency, and the Federal _________ Assistance Administration.

27. The Federal Emergency Management Agency, in a joint effort with _______ and _________ governments, has developed plans and capabilities to be put into operation in case of nuclear attack.

28. ______ ________ is a plan for the evacuation of 150 million Americans from about 400 high-risk areas to about 2000 persumably lower risk 'host' areas, primarily small, rural towns at least 50 miles away.

29. Regions around 60 important military installations, and 330 other military/industrial installations, and urban areas with populations of 50,000 or more are called ________ ________ areas.

30. ______ ________ are structures designed to offer substantial protection against direct nuclear effects.

31. ________ ________ are buried or ________ structures shielded from radiation by using different materials such as steel, concrete earth, water, and wood which reduce radiation intensity by differing amounts.

32. ________ ________ ________ is a sophisticated state and local governmental communications net which will serve 3000 protected command posts.

33. Attack warning will be passed over a National Warning System to over ________ federal, state, and local warning points which operate ________ hours a day.

34. Specially trained radiation experts called ________ ________ ________ will assist the officials of the Emergency Operating Centers in reporting local nuclear war damage to federal authorities.

35. Crisis training via ________ ________ must now be relied on to educate citizens on hazards and survival actions.

36. FEMA's Federal Preparedness Program central element is ________ of ________, a highly classified program involving scores of secret protected facilities equipped with a variety of advanced data processors, communication and other information systems to carry out detailed nuclear procedures and contingency plans.

37. Approximately ________ relocation centers are scattered throughout ________ states in a 350-mile radius around Washington, D.C. known as the Federal Relocation Arc.

38. A ________ ________ produces more nuclear fuel than it consumes while generating power.

39. ________ is the process of combining atomic nuclei to form a single heavier element or nucleus and to release large amounts of energy.

40. ________ is a heavy silvery-white metallic element, radioactive, easily oxidized, and having 14 known isotopes of which U238 is the most abundant in nature.

COMPLETION QUESTIONS

ANSWERS

1. nuclear; radiation; pulse; radioactive
2. protection; control; warning; public; defense; industrial; government
3. thermal
4. radioactive
5. explosive blast
6. indirect
7. direct; fallout
8 fallout
9. direct; blast
10. two-second
11. light
12. 53 miles
13. 7; 6; scars; 5; skin
14. 1,000 to 2,000
15. 10,000
16. blast
17. firestorm; conflagration
18. electromagnetic wave; gamma
19. EMP
20. radiation; hot-spots

CATEGORY D
ANSWERS to COMPLETION QUESTIONS - page 2

21. biological

22. TTAPS; atmospheric ; 100

23. troposphere; dust; radioactive; ozone

24. Carl Sagan

25. deterrence

26. Defense; Protection; Disaster

27. state; local

28. Crisis location

29. high-risk areas

30. Blast shelters

31. Fallout shelters; semi-buried

32. Emergency Operating Centers

33. 1200; 24

34. Radiological Defense Officers

35. news media

36. Continuty of Government

37. 100; 5

38. breeder reactor

39. Fusion

40. Uranium

TEACHING AIDS

Approaches to consider for this section:

1. Present films on the Effects of Nuclear War which will enable students to grasp the severity of consequences related to this issue.

2. Invite a representative from the local Civil Defense Office or the Red Cross to give a talk on their contingency plans and mode of operation in case of nuclear attack.

3. If a resident in your area has built a bomb shelter ask if a) that person would like to talk to the class on the rationalization of his/her expenditures and b) if the class could see what the shelter actually looks like.

4. If you know of a building that may be in the process of being demolished by TNT or other types of explosives, it may be of interest to students to observe the quickness and complete destruction that occurs.

5. You may wish to invite a colleague from other disciplines such as biology, zoology, the environmental sciences and nursing to talk to your class on the impact of nuclear fallout in their areas of expertise.

6. Poll students as to what they expect will happen in five, ten or twenty years from now:

    a) a nuclear war
    b) a stalemate
    c) a real peace
    d) a real war

7. Have students prepare book reviews on the following:

    a) Oliver S. Own: Natural Resource Conservation - An Ecological Approach, 3rd edition, Macmillan, 1980, Chapter 18 - "Nuclear Energy, Radiation, and Man."

    b) Alvin Toffler: Future Shock.

    c) Paul R. Erlich and Carl Sagan: The Cold And The Dark, The World After Nuclear War, 1984

    d) Edward Zuckerman: The Day After World War III, 1984

8. You may wish to show the class the 1984 TV educational channel film, "Eight Minutes to Midnight," and then get their reaction to the work of Dr. Helen Caldicott.

9. Question students on the following:

   a) How does Civil Defense differ from Military Defense? from National Defense?
   b) Who finances Civil Defense? National Defense?
   c) What role would the State National Guard play in case of a nuclear attack?
   d) What is an acronym? List the five most important acronyms related to the Effects of Nuclear War and Civil Defense. What does each letter of the acronym selected mean?

TOPICS FOR DEBATE

1. Civil Defense: An Unnecessary Action.

2. Mandatory Bomb Shelters for Every Home.

3. Nuclear War: A Myth.

4. War or Peace: A Threat.

5. War and Peace: A Contradiction.

6. Disarmament for World Survival.

LIBRARY RESEARCH ASSIGNMENTS

1. The 1979 nuclear plant episode at Three Mile Island, Pennsylvania. What factors led to the plant's shutdown and what is the present status of the operation of the nuclear plant?

2. Prepare reports of the bombing of Nagasaki and Hiroshima, Japan in 1945 and the "effects" on the survivors.

3. Read journal articles such as Foreign Affairs on the effects of nuclear weapons. Prepare reports.

4. The operation and function of the Federal Emergency Management Agency to include their operating budget.

5. Prepare reviews of articles and reports by:

   Center for Peace and Conflict Studes - Wayne University, Illinois
   Bulletin of Atomic Scientists
   RAND Reports

6. Research and review the background and status of 1975 Russian Nobel Peace Laureate Andrei Sakharov. You may wish the students to read his Nobel Peace Lecture "Peace, Progress, and Human Rights."

7. Research the writings on nuclear weapons and arms control by:

   a) George Kennan
   b) Paul Jacobs

8. Compare and contrast the 1984, 1980, and 1976 Democratic and Republican presidential platform on "nuclear weapons."